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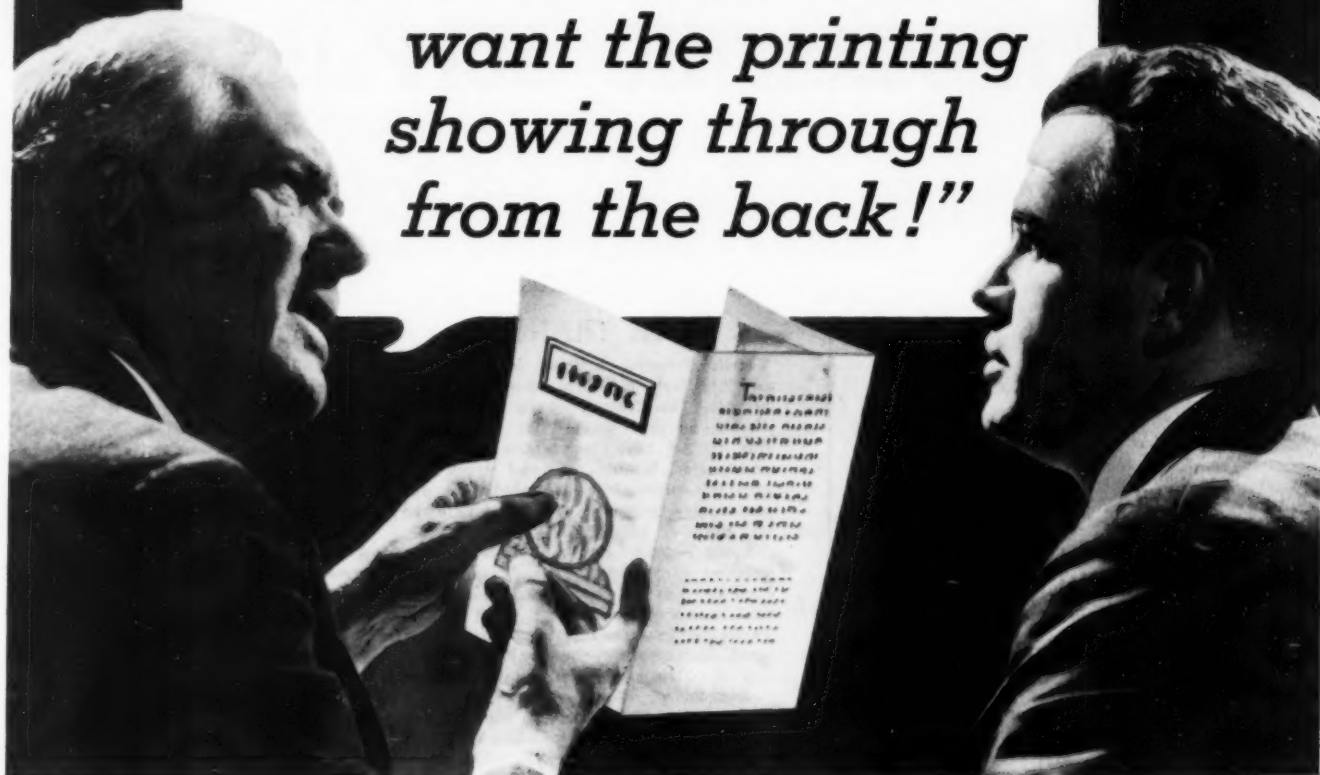
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Each month we will briefly describe an outstanding item in the Senefelder group of supplies for the lithographer.

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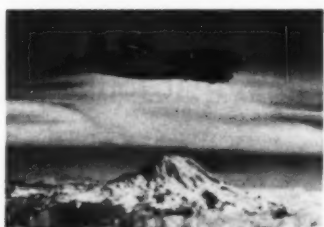
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MODERN LITHOGRAPHY

LITHOGRAPHED IN THE INTERESTS OF LITHOGRAPHERS EVERYWHERE



THE COVER

A market for lithography which has been growing by leaps and bounds has been the air-lines industry. Last month it took an added spurt when the possibility of all-express planes with attractive rates loomed on the business horizon. The photo shows one of Pan-American Airways new Stratoliners.

June, 1940

Volume 8 Number 6

Readers will recall the article on the Elementary School as a market for lithography by George Ramage of the Instructor Magazine, which appeared in our April issue, as being a discussion purely from the standpoint of the advertiser, which was all right as far as it went. But in the opinion of Elmer J. Anderson, who is an educator, it didn't go nearly far enough. Hence, Mr. Anderson, who is anything but inarticulate, proceeded to remedy the situation by filling in the gaps. Lithographers considering the elementary school as a market for lithography have missed the boat, haven't even scratched the surface, was the brunt of his thesis. As we read over his letter we felt he had something. So we asked him to expand the subject into an article. Quicker than you can say "Elmer Anderson" back came the expanded article, and Mr. Anderson lives in Honolulu, too. It appears on page 32. Next month we plan to install a new department to supplement our Lithographic Abstracts. We have always been of the opinion that in order to get the most good out of the abstracts the most important should be commented on and interpreted by an authority. The necessary arrangements have, therefore, been made for inauguration of the department next month. The name of the authority you'll learn in due time.

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MODERN LITHOGRAPHY

Reg. U. S. Pat. Office

GRANT A. DORLAND, President; IRA P. MACNAIR, Vice-President; WAYNE E. DORLAND, Secretary-Treasurer; RICHARD ROLEY, Editor; SAMUEL D. WOLFF, Advertising Manager. Official Organ of the National Association of Photo-Lithographers. Published monthly on the 15th by The Photo-Lithographer, Inc., at 254 W. 31st St., New York, N. Y. ADVERTISING RATES: Advertising rates made known on application. Closing date for copy—20th of the month previous to date of issue. SUBSCRIPTION RATES: \$3.00 per year in the United States, \$4.00 per year in Canada. Single copies, 30 cents. Entered as second class matter, Dec. 29, 1939, at the Post Office at New York, N. Y., under the Act of March 3, 1879.



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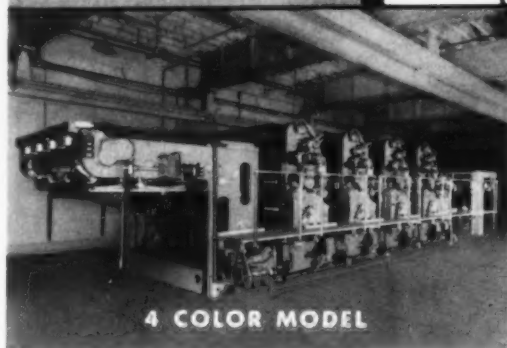
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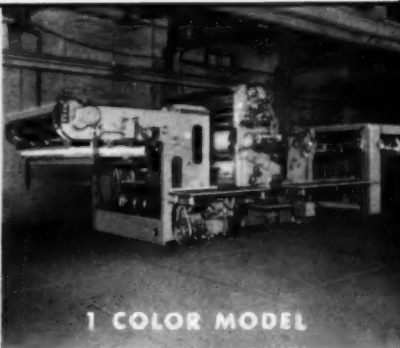
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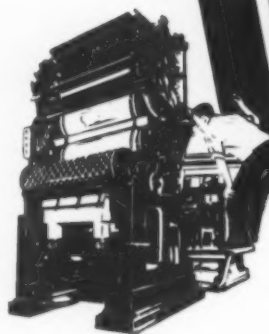
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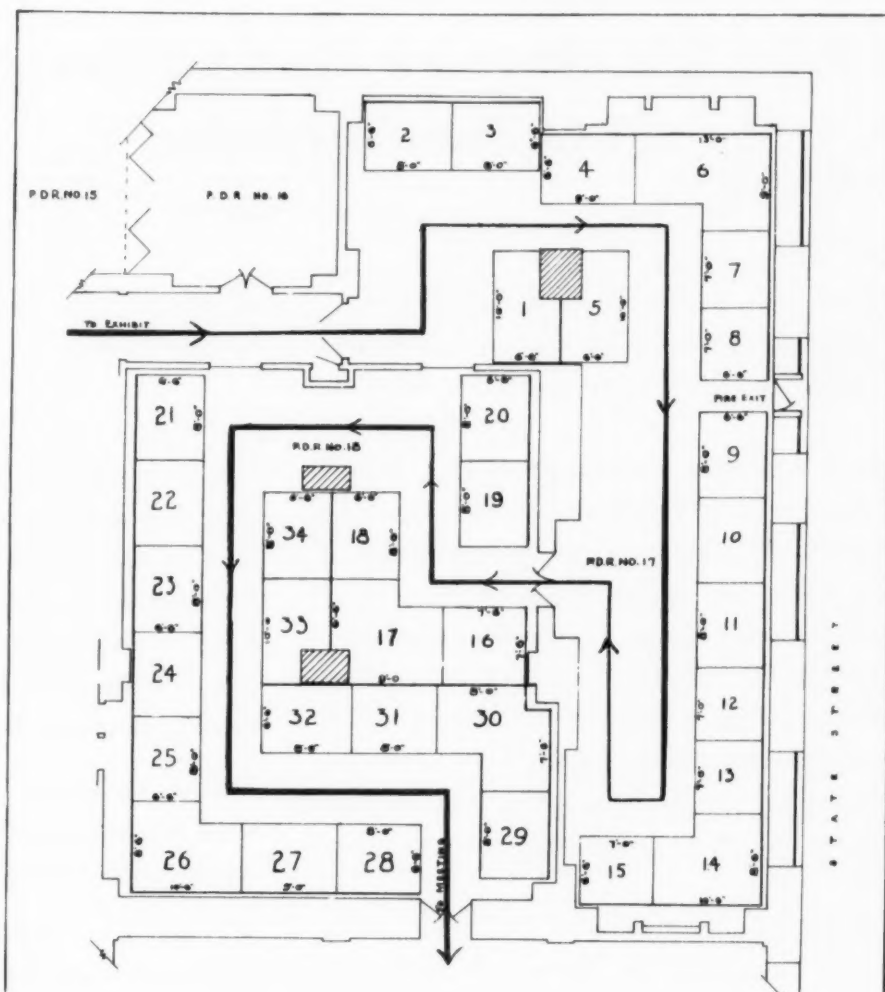
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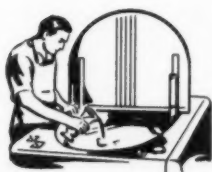
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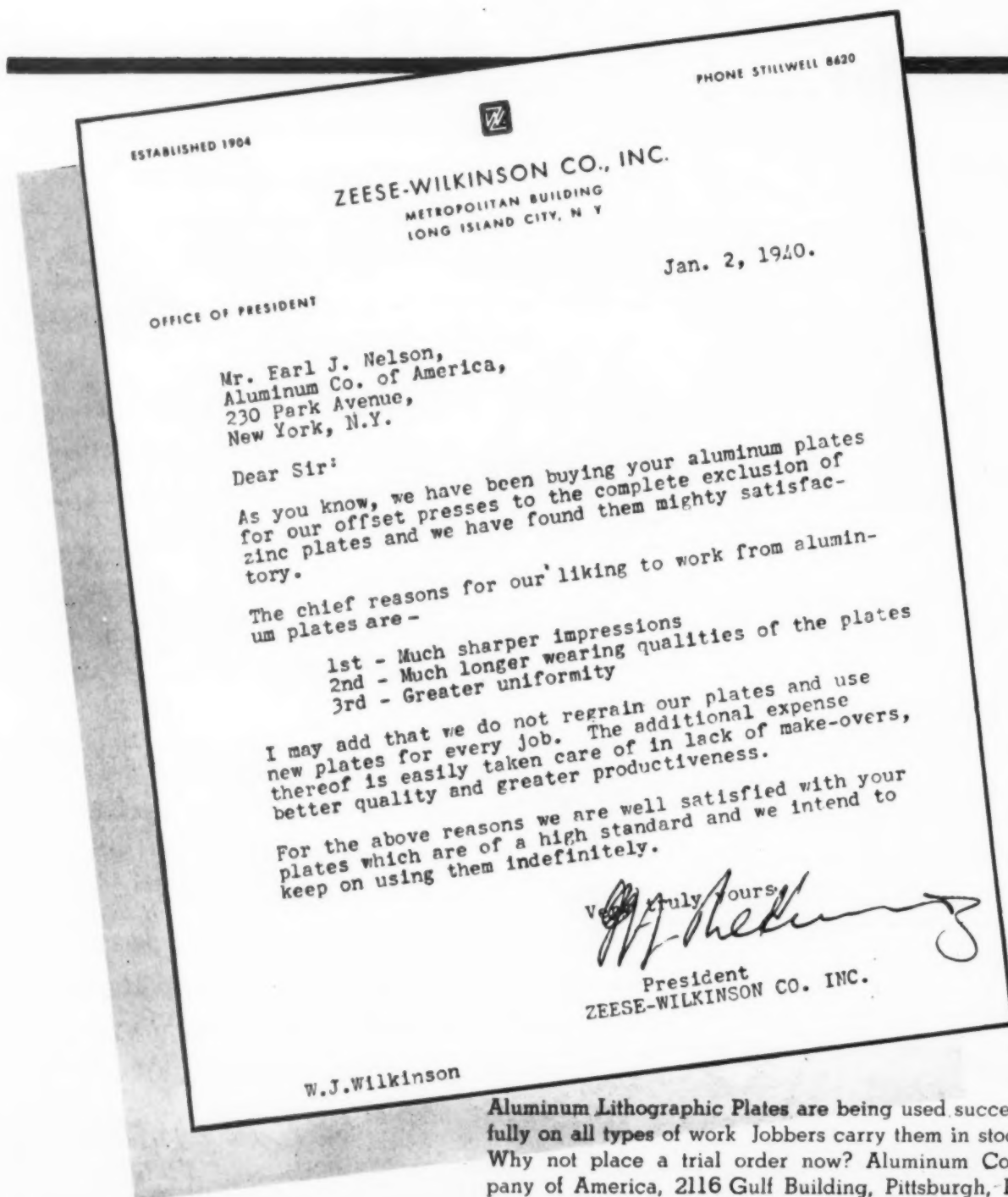
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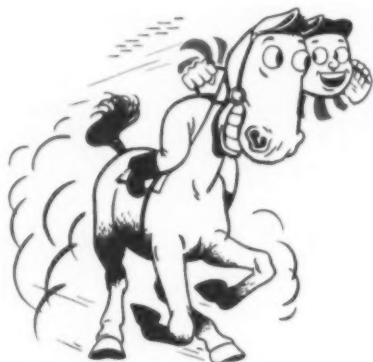
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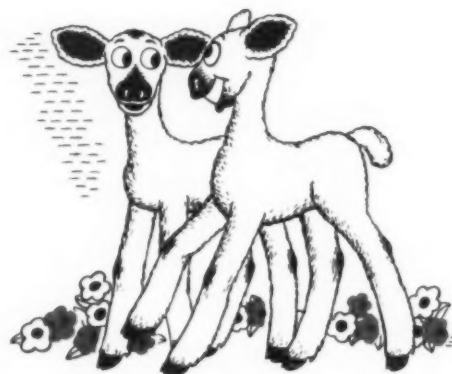
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Keeping in Touch

PREPARED BY INTERNATIONAL PRINTING INK DIVISION OF INTERCHEMICAL CORPORATION • JUNE, 1940



Chemical Ferris Wheel Gives Evaporation Rates

The last few years have brought great advances in printing inks, and many of these advantages have been concerned with drying time. For instance, the quick-drying Vaporin inks, Lithox for lithography, Hold-fast, new pigmented aniline-type inks, and other recent developments have made significant contributions to the Graphic Arts by virtue of their faster drying properties.

Evaporation rate of ink solvents has a definite relationship to ink drying time. So the precise measurement of this characteristic is an important operation in The Research Laboratories of Interchemical Corporation, parent company for IPI.

The "Ferris wheel" apparatus shown here is ingenious. It determines simultaneously the evaporation rates for several materials. Like much of the Laboratories' equipment, it was specially designed—designed to do a job which contributes to finer printing.

Uncle Sam Likes His Own Advertising

While some departments of the Government seem to be giving advertising quite a kicking around, other departments are finding it to be useful as a method for stimulating sales. The Treasury Department's savings bond division reports that every promotional dollar expended thus far has produced \$1,000 in bond business. Not a bad return.

Perfumed Ink May Prove to Be Embarrassing

Shades of Horace Greeley! The printer's devil now smells like a geranium, and a rich lush odor of crushed roses pervades the press-room. For the boys are mixing up the latest batch of delicately scented inks to print an advertisement for a new kind of perfume.

To the old giants of journalism, the pungent smell of printer's ink was the very elixir of life. But now, what a difference there can be in that smell! From Los Angeles to Connecticut, with plenty of stops in between, come reports on the growing use of various types of perfumed and flavored inks.

In St. Louis, a newspaper advertisement wafted the gentle aroma of Potpourri perfume towards the reader. In Chicago, inks used to print an advertisement for chewing gum were flavored with cinnamon. And in New Britain, a newspaper edition was steeped with the fragrance of apple blossom! Don't ask why.

Yes, Messrs. Bonfils, Pulitzer, Bennett, and other hardheaded gentry of old-school newsdom would find it hard to reconcile the power of the press with Chanel's No. 5.



And an insidious thought occurs to us. How long will it be before this little scene occurs when hubby comes from the office?

Wife (sniffing suspiciously): "John, where have you been? You're reeking with perfume!"

Husband: "Oh, it's nothing, dear. I've just been reading the evening paper."

Colors Without Names

The Inter-Society Color Council reports that there are no less than 7,044 different colors classified and listed. But there are only 3,400 words to describe these many varieties of colors. What the other 3,644 are called, the Council doesn't say—perhaps they are referred to as "that color over there." If they asked our Recording Spectrophotometer Laboratory we would have a curve for it.

Advertisement

INK HELPS ADVERTISE A NEW OFFSET PAPER

When a paper company decides to advertise the merits of a new offset paper, it wants to show its public just about the finest kind of offset printing that can be done on the new stock. Crocker Burbank Papers, Inc. recently introduced an offset paper called Crobank.

Rogers-Kellogg-Stillson produced the announcement of Crobank offset stock, and they used IPI offset inks on the job. The resultant advertising piece, with rich black solids and handsome halftone reproductions, was a real credit to the new paper—and to those who had a hand in producing the announcement. We hope the inks had something to do with it, too.



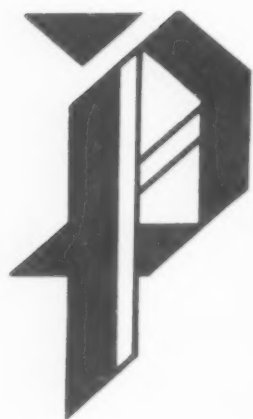
New Yellow Brings Strong Words

In previous issues of "Keeping in Touch" we reported, perhaps immodestly, that the superintendent of a large litho plant said of our new Offset Lemon Yellow, "This is the finest lithographic ink that I have ever used." Now we are told that the foreman of another important plant, not previously a customer, called this color "the best yellow I ever put on my press." Strong words, but they're from users. Have you tried this remarkable Yellow and the other colors in the new line?

Film Facts for Fans

IPI's color movie, "Keeping in Touch," continues to be heavily booked—it is still being shown on an average of four times every three days. Have you seen it? It is available to Graphic Arts groups.

Westvaco Inspirations for Printers



PRINTING in some form or other! What form? What layout? What type of engravings? What colors? What type? What papers? What form of artwork? What style? What theme?

These are the problems you must solve if your printed advertising is to produce sales.

For over fifteen years *Westvaco Inspirations for Printers* has been a gallery of printing techniques displayed for those engaged in the Graphic Arts; not guesswork but facts; not layouts but actual examples for you to study. It is an inspirer of ideas of your own.

Westvaco Inspirations for Printers is not for sale. But your printer will, upon request, supply you with copies of this issue. Tell him you want "Westvaco Inspirations for Printers," and No. 123, bearing the cover design shown at the right, will soon be on your desk.

Note, Mr. Printer: This insert, with copy exactly as above, will appear in the July issues of four advertising magazines. Your Westvaco Distributor will supply you with copies of the current issue, No. 123, upon request.

WEST VIRGINIA PULP & PAPER COMPANY

New York Chicago Philadelphia San Francisco

Copyright 1940, West Virginia Pulp & Paper Company

Cover design by Earle Goodenow



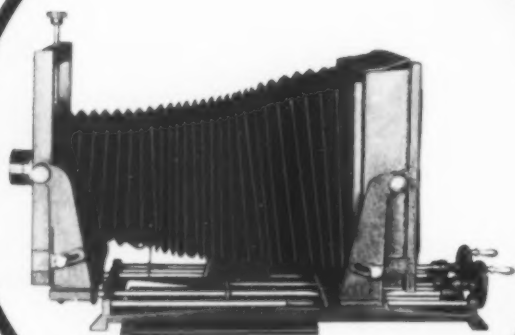
G U T E N B E R G



estvaco

Inspirations for Printers No. 123

HANDLE YOUR OWN COLOR SHOTS IN YOUR OWN PLANT



LECTRO COLOR CAMERA

\$225⁰⁰

CAMERA ONLY, F.O.B. NEW YORK

SPECIFICATIONS:

All metal cast in one piece using 8 x 10 glass plates with the latest rear adjustments for micro focussing. Designed to insure hair-line registration. Camera is equipped with all angle movements and permanent filter movers with exposure meter for correct lighting of commercial set-ups. Adjustable metal diaphragm for using any focal length lenses. Tripod is of special nature and is priced separately.

This new commercial still color camera enables your camera operator to take direct or indirect color shots of your customers' OWN MERCHANDISE RIGHT IN YOUR OWN PLANT WITHOUT ANY SPECIAL STUDIO, LIGHTING EFFECTS OR PREVIOUS STUDIO EXPERIENCE.

Each step in this process of making color shots of commercial "set-up" is scientifically controlled by color and light measuring instruments that are supplied as extra equipment for this new graphic art still color camera.

COST is the only obstacle that stands between your present customers and color printing. The very first step the middle-class advertiser has to go thru in order to supply you with color copy has prevented color from being universally used. This step is very costly and brings a lot of people into the picture that not only add to the costs but also tend to complicate the matter.

THE LE ROY COLORGRAPHIC CAMERA BRIDGES THIS GAP AND ALLOWS YOU TO HANDLE YOUR CUSTOMERS OWN MERCHANDISE DIRECTLY.

Talk this matter over with your own sales force. Let them tell you what it will mean to them to be able to handle their customers color printing directly and exclusively.

It means the opening up of a new field and new business from old customers.

SEND FOR DESCRIPTIVE LITERATURE EXPLAINING ALL ABOUT THIS NEW STEP OF CONTROLLED COLOR ADVERTISING.

Another Color Controlled Method by Dr. Adrian E. LeRoy

INTERNATIONAL PHOTOGRAPHIC RESEARCH LABORATORIES MANUFACTURE THE FOLLOWING

LECTROCHROME ONE SHOT COLOR
CAMERAS
RADIOGRAF COLOR CONTROL
ENGRAVING CAMERAS
LECTROTRIPLE ACTING DENSITOMETERS
COLOR LIGHT EXPOSURE METERS
LECTROPLATING ETCHING MACHINES
ENGRAV-O-TYPE ENGRAVING CAMERAS
COLOR TEMPERATURE METERS (LeRoy
system)

FILTERS (direct or compensating)
LECTRO CONTROLLED ENLARGERS
ELECTRIC CONTROLLED TRIPLE
DEVELOPERS
SCANNING FILTERS FOR COLOR COPY
AUTOMATIC EXPOSURE TIMERS
KODAKCHROME SEPARATORS
HIGH SPEED PHOTOGRAPHIC BROMIDE
EMULSIONS
INFORMOGRAPH CHARTS

All Under the Supervision of a Scientifically Equipped Research Laboratory

INTERNATIONAL RESEARCH LABORATORIES

228 SEVENTH AVENUE

— EST. 1921 —

NEW YORK, N. Y.

EDITORIALS

IN TIMES like these, so charged with tension and shock, the realization that many lithographic craftsmen and plant owners are striving to retain the same positive outlook and constructive approach towards their craft and business which has characterized more normal days is heartening, to say the least. The all-day, share-your-knowledge clinic held by the New York Photo-Lithographers' Association earlier this month prompts us to this observation. The drama of modern war as unfolded to us by way of screaming, black 144 pt. headlines, short wave and the newsreel is anything but inspiring. Even in the not-so-isolated U. S. men are not finding it easy to look too far into the future. It takes courage and faith. Courage and faith, then, was what the New York Photo-Lithographers had as they sat all one Saturday from 10 o'clock in the morning until 5 o'clock in the afternoon on a hot and humid day early this month and discussed their current and probable future production problems while in another part of the world hell was breaking loose. They provided an example, we think, to hold up before the industry. Naturally, wars can't be ignored. They are bound to affect industry and business, especially this war, possibly with permanent results. Yet many of war's dislocating effects can be minimized if as much of the policy and routine followed during more normal times is retained.



MINDFUL as we are of the value of share-your-knowledge technical clinics, such as the one held by the New York Photo-Lithographers mentioned above, we are inclined to

think sometimes that the industry gives too much attention to them in comparison with the attention it gives to selling. That is not to say that there should be fewer technical clinics, but rather that there aren't enough share-your-knowledge buyer-salesman clinics. The Young Lithographers Association, of New York, has sponsored some very interesting sessions on the subject, and we recall one held sometime ago by the New York Photo-Lithographers in which several lithograph salesmen made their presentations to a buyer from a large advertising agency, which was lively and informative. But these have not been enough. There should be many more, particularly during these times. As we pointed out in an article which appeared last fall when the present war began, there was a tendency during the war which began in 1914 for some manufacturers to restrict their advertising and promotion activities—and, therefore, their purchases of printing—due to increased production, government war orders and other reasons. After the war, however, these advertisers found that it was a long, hard and expensive job to regain the positions they once had held. They should not be allowed to make this mistake again, and we think it should be the duty of the lithograph salesman, not only in his own interests, but in the interests of his clients to see to it that they don't. We suggest, therefore, that the industry, through its various organizations give special attention during the coming months to the problems of the advertiser and be ready with sound advice and sage counsel. Normal advertising and sales promotion activities should be maintained. Frequent airings of the problems now confronting advertisers at share-your-knowledge sessions of lithograph salesmen will provide the arguments for maintaining them. If the buyer can be persuaded to participate, all the better.



CONVENTION SNAPSHOTS

12. Fred J. Wadley, Jeffries Banknote Co.; Randolph T. Ode, Providence Lithograph Co.; E. H. Wadewitz, Western Printing & Lithograph Co., and re-elected president of the LNA; Carl Schmidt and Otto Schoening, both of Schmidt Lithograph Co. 11. Victor M. Savale, George LaMonte & Sons; Milton P. Thwaite, Dennison & Son; W. Floyd Maxwell, executive secretary LNA. 9. Mr. and Mrs. John Devine, Fuchs & Lang Mfg. Co.; Mrs. James Strobbridge; Maurice Saunders, chairman LNA board. 10. Arthur A. Goes, Goes Lithographing Co.; William S. Forbes, Forbes Lithograph Mfg. Co.; Percival Oviatt, legal counsel LNA; Charles W. Frazier, Brett Lithographing Co. 8. Mr. and Mrs. George Loder, National Process Co. 3. John M. Wolff Jr., Wolff Printing Co.; Ralph J. Wrenn, Stecher-Traung Lithograph Co.; George W. Hall, Western Lithograph Co.; Fred J. Wadley, Jeffries Banknote Co.



L.N.A. REELECTS

Western Printing & Litho Head to Serve 2nd Term; 35th Annual Meeting Huge Success as California Hosts Shoot the Works.

E. H. WADEWITZ, president of Western Printing & Lithograph Co., Racine, Wis., was elected president of the Lithographers' National Association for a second term at the 35th annual meeting held at Del Monte, Calif., June 4 to 7. Milton P. Thwaite, president of Dennison & Son, Long Island City, N. Y., was re-elected vice-president. George C. Kindred, Kindred, MacLean & Co., Long Island City, N. Y., was named treasurer, an office formerly filled by Mr. Thwaite. Maurice Saunders will continue as chairman of the board, W. Floyd Maxwell as executive secretary and Percival D. Oviatt as general counsel. New names added to the board of directors this year are S. M. Luders, vice-president of Irwin-Hodson Co., Portland, Ore., and Curt Teich, Jr.,

secretary of Curt Teich, Inc., Chicago.

Concluding the first half of the much-touted Lithographers' Travel-America Tour which left Chicago May 28th and brought lithographers and their wives from the east and middle west, the convention officially got under way Tuesday, June 4th, California's lithographers acting as hosts, with an address of welcome by Mr. Wadewitz. The meeting at Del Monte marked the second migration of L.N.A. lithographers and their guests to Del Monte, the first having taken place 16 years ago. It was a meeting into which had gone many months of preparation and planning. The California lithographers were determined to show their guests that in the intervening 16 years western hospitality had lost none of its edge.

MODERN LITHOGRAPHY





WADEWITZ PRESIDENT

Business sessions were confined entirely to the mornings leaving the afternoons and evenings free for golf and entertainment. A continuous whirl of barbecue feasts, cocktail parties, bathing beauty contests, diving exhibitions, luncheons on Del Monte's fashionable hotel terrace, an unending program of golf, and entertainers from the Golden Gate International Exposition filled every minute. The round of festivities was climaxed by the annual dinner held in the Bali Room on Thursday evening.

In his welcome address on Tuesday morning, President Wadewitz briefly outlined a few of the problems which he said faced the industry in the course of the coming year. Praising the advances that had been made, he at the same time called attention to the lack of an adequate training program for craftsmen. Reminding the meeting of technological improvements in material and equipment contributed by manufacturers in the field, he deplored the fact that the industry itself had not been able to keep pace. "Let us then," he urged, "make the keynote of our convention one of further progress in all phases of lithographing management,

operation, production and quality, with an eye to continued progress."

Almon E. Roth, president of the San Francisco Employers Council, and Lloyd E. Wilson, public relations director of the Young Men's Christian Association of San Francisco, were the two speakers to follow Mr. Wadewitz. Choosing as his subject "Some Realistic Aspects of Collective Bargaining," Mr. Roth described the awakening interest on the part of foresighted employers in employee relations today. While business as a whole had been slow in recognizing the need for a better balance of employer and employee strength, he said, most employers have at last adopted broad human labor policies. He called attention to a program which has been adopted with much success by the San Francisco Employers Council, saying that among its most praiseworthy accomplishments had been the following: (1) provision of a clearing house for employer problems; (2) a research service relating to arbitrations and negotiations with labor, and (3) a sound public relations program. Mr. Wilson in his talk defined the principal social forces governing industry

and business today, attempting thereby to clarify the psychological influences now operating in American business.

The business sessions of the second day of the convention opened with the annual meeting of the board of directors of the Lithographers' National Association. The meeting, which was for members only, was followed by a talk on the progress of the Lithographic Technical Foundation during the past year, by R. V. Mitchell, Harris-Seybold-Potter Co., Cleveland. One of the highlights of Mr. Mitchell's talk was his prediction that the time would come when the Lithographic Technical Foundation will sponsor instruction classes in lithographic craftsmanship five nights a week for 48 weeks out of the year. Day classes will also be given, he added. Reviewing the activities of the Foundation, Mr. Mitchell said they reflected in a favorable light the progress of the entire industry, but at the same time much in the way of research and improvement remained to be done. "We are an industry without standards," he said. "We accept our problems as being part and parcel of the industry

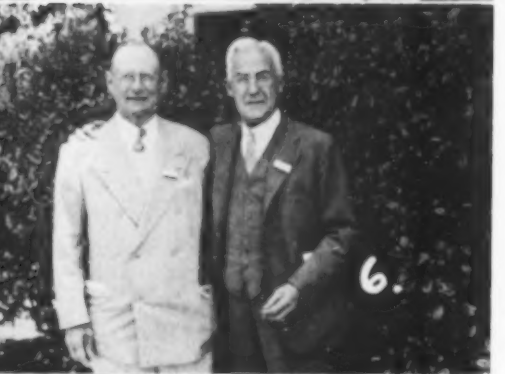
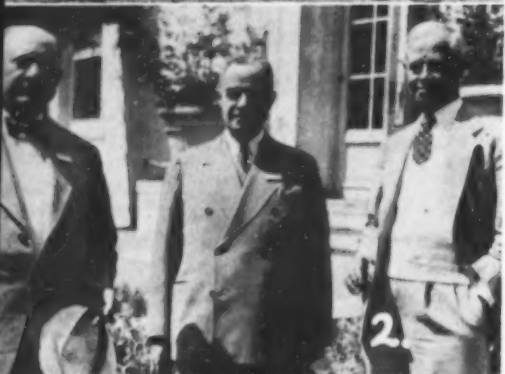


and go along with them. The Rockefeller Foundation has proved that this should not be so. So can we in our own industry if we apply ourselves as we must."

Following Mr. Mitchell, Dr. Frederic P. Woellner of the University of California delivered a talk entitled

"The Way to Look At It", which was a plea for continued faith and trust in the traditional American institutions.

On Thursday, the last day of formal business sessions, conventioners heard Victor E. Hecht, vice president of Zellerbach Paper Co., San Francisco, on "Mars Plays with Paper," and Dr.



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Racine, Wis.

A. J. WILMANN, Secretary
Wilmanns Bros. Co.
Milwaukee

JOHN M. WOLFF, JR., President
Wolff Printing Co.
St. Louis

George W. Dowrie of Stanford University on "American Business and the War." Mr. Hecht described the current situation in the paper industry as a result of the war. Shipments of pulp from Finland and the Scandinavian countries have definitely stopped, he said, and when they will be resumed he characterized "as anyone's guess." He said that after the first World War resumption of pulp shipments which had been curtailed were not resumed until two years after cessation of hostilities. He indicated, however, that while this fact might be borne in mind in any attempt to gauge the paper situation, it should also be borne in mind that during the first World War the Scandinavian countries were not involved as they are now. He warned lithographers against speculative buying, reminding them of the disastrous and costly results of overbuying in the last war. In the talk which followed, by Dr. Dowrie, conventioners were told of the artificial prosperity which can be caused by a war of world-large proportions. He said that inflation faced us even now, as well as a disruption of our international trade which may have dire results on our national business.

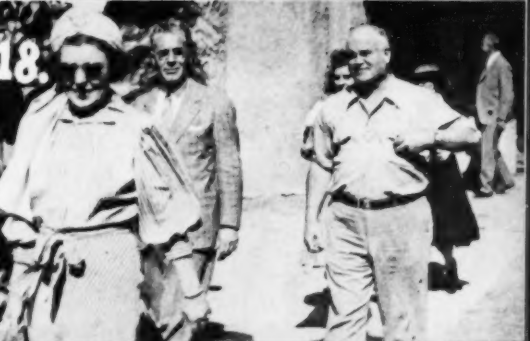
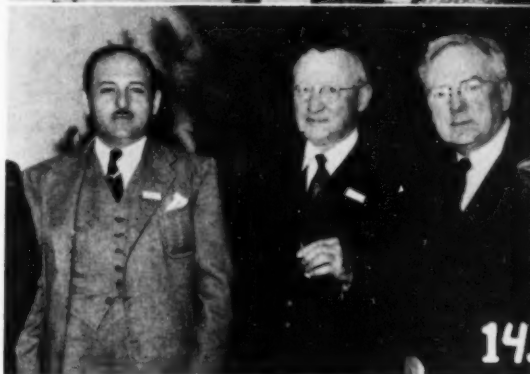
NOT too much credit for the success of the L.N.A.'s 35th annual meeting can be paid the able committeemen and committee women who, under direction of Louis Traung, carried out their various tasks. They included:

Arrangements: Carl R. Schmidt, George W. Hall, Co-Chairmen, S. S. Kauffman, James Schwabacher, Robert Bentley; *Program:* Richard Schmidt, Chairman; F. D. Barnhill, Otto A. Schoning, W. E. Steege, B. M. Carlisle,

Vincent Hobbs; *Entertainment-Annual Dinner:* Frederick E. Keast, Chairman; R. A. Heffner, Walter H. Burroughs, A. Weinstein, Frank H. Abbott, Jr.; Charles Paganini, Fred Farnum; *Golf:* H. T. ("Mike") Gardner, Chairman; Harrison Chandler, Charles F. Wright, E. H. Lenz, Clarence V. Ore; *Attendance:* Ralph J. Wrenn, Chairman; R. E. Burkett, Robert A. Goldman; *Transportation:* Leo Blank, Chairman; Harold B. Walters, Thomas A. Taylor, Norman G. Stodick; *Finance:* Louis Sloss, Chairman; F. J. Wadley, Jr.; Adolph Lehmann; *Publicity:* G. L. Beedle, H. S. Lund, Co-Chairmen; *Reception:* Mrs. Carl Schmidt, Mrs. M. L. Davidson, Co-Chairmen; Mrs. Charles Traung, Mrs. E. H. Lenz, Mrs. Robert Bentley, Mrs. S. S. Kauffman, Mrs. James Schwabacher, Mrs. H. S. Lund; *Hospitality:* Mrs. Otto Schoning, Mrs. George Hall, Co-Chairmen; Mrs. Robert Goldman, Mrs. Louis Traung, Mrs. Louis Sloss, Mrs. Charles Paganini; *Souvenirs:* Mrs. Richard Schmidt, Chairman; Mrs. Carl Schmidt, Mrs. Charles Wright, Mrs. Otto Schoning, Mrs. Granville Beedle; *Bridge Teas:* Mrs. Charles Wright, Mrs. F. D. Barnhill, Co-Chairmen; Mrs. Frank Abbott, Jr., Mrs. Adolph Lehmann, Mrs. A. Weinstein, Mrs. Thomas Taylor, Mrs. B. M. Carlisle. *Scenic Trips:* Mrs. Leo Blank, Mrs. Ralph Wrenn, Co-Chairmen; Mrs. George Hall, Mrs. Russell Burkett, Mrs. Frederick Wadley. *Golf:* Miss Dorothy Traung, Mrs. H. T. Gardner, Co-Chairmen; Mrs. Clarence Ore, Mrs. Walter Burroughs, Mrs. Norman Stodick. *Luncheons:* Mrs. Frederick E. Keast, Chairman; Mrs. George Hall, Mrs. Fred Farnum, Mrs. Frederick Wadley, Mrs. William Steege, Mrs. Robert Heffner, Mrs. Vincent Hobbs, Mrs. Granville Beedle.

MORE CONVENTION SNAPSHOTS

1. Clarence Ore and W. E. Steege, both of Crocker Union; Douglas Miller, West Virginia Pulp & Paper Co.; D. M. Carlisle, Jr., A. Carlisle & Co. 2. William Merten, Strobbridge Lithographing Co.; Horace Reed, Niagara Lithograph Co.; Carl Schmidt, Schmidt Lithograph Co. 4. Fred Hacker, and Hobart Hicks, American Type Founders, Inc. 5. Mrs. Louis Traung, Dorothy Traung, Muriel Rehm. 6. Louis Traung, Stecher-Traung Lithograph Corp., and Maurice Saunders, chairman of board LNA. 7. J. W. Valiant, Harris-Seybold-Potter Co.; Maurice Saunders, and George Kindred, Kindred, McLean & Co. 13. Milton P. Thwaite, Dennison & Son; George Kindred, Kindred, McLean & Co.; J. W. Valiant, Harris-Seybold-Potter Co.; Mrs. George Kindred, and Mrs. Milton P. Thwaite. 14. Paul Goodell, Arvey Corp.; E. L. Altwater, Independent Pressroom, Inc.; L. A. Ireland, Printers Board of Trade, San Francisco. 15. Jean Viscount, and Mr. and Mrs. Joseph Viscount, Snyder & Black, Inc. 16. E. P. Rockwell, Miami Valley Lithographers Ass'n; W. F. Cornell, International Printing Ink Corp. 17. Mr. and Mrs. David Horwitz, Graphic Arts Ink Co. 18. Mrs. Joseph Viscount, Joseph Viscount, Snyder & Black; Hal W. Johnston, Stecher-Traung Lithograph Corp.



OFF THE CUTTING ROOM FLOOR

(Aboard the LNA Convention Tour)

"ALL ABOARD!" With those familiar words the L.N.A. convention tour started on its way to Del Monte. It wasn't quite "all" aboard, however. The disturbing news from the European war fronts necessitated several last minute cancellations which cut the size of the tour party somewhat below the number anticipated. What the party lacked in numbers, though, it more than made up in enthusiasm.

Open house at the Palmer House, Chicago, the afternoon and evening before departure, got the group off to a start in the proper care-free frame of mind. Various members of the Chicago litho fraternity, who weren't going along but who wished they were, dropped in to speed the parting group on its way. George Meyercord headed the "seein' off party" to the train and saw to it that no intoxicating beverages, which might have marred the solemn nature of the occasion, were served.

Charlie Titsworth brought his boss along with him as far as the station—probably a check up to make sure he was in good company. His luggage consisted of four bags,—one filled with clothes.

The party's most consistent walkers were Mr. and Mrs. George Loder. They were out at every station to stretch their legs and at Kansas City climbed some huge

hill, up which your reporter ventured only half way, to inspect a great stone memorial. They covered so much of the mileage on foot, as a matter of fact, that the Santa Fe authorities will be spoken to very seriously about a rebate.

Every one thought it was a joke when, rolling through Kansas the second evening, Maurice Saunders asked quite seriously who would care for a freshly caught trout for breakfast. He made good, though, getting off the train somewhere in the neighborhood of Las Vegas at 5:00 A. M. the next morning, catching a handsome string in half an hour, and motoring to catch the train again as it stopped to take on water. What those train people wanted with water we'll never be able to figure out.

Arriving at the bus connection for Santa Fe came one of those hectic moments in the life of a tour director, when it was discovered that the departing train still carried Mrs. Viscount and her daughter, Jean. The train was flagged to a stop and the party reunited. Turned out no one had told them to get off, and Mrs. Viscount, as she frankly observed, is no clairvoyant.

On the sleeper jump from Albuquerque to the Grand Canyon, J. W. Valiant was host to a serious minded little group of students of Hoyle. All professed to have broken even, but our private source advises that A. Titgemeyer got the dough. His system, he tipped us off, is always to "have them" when called.

At Los Angeles, Arthur Goes, Horace Reed, Trowbridge Marston and Vernon Mitchell joined the group for the scenic ride on the

20. Harry Brintall, Harry Brintall Co.; Anthony J. Math, Sinclair & Valentine Co.; Mrs. Anthony J. Math, Mrs. Harry Behrens, and Harry Behrens, Associated Ink Co. 21. Louis Traung, Stecher-Traung Lithograph Co., and Dorothy Traung. 22. Joseph Carroll, Sinclair & Carroll Co. and party. 23. H. S. Lund, Lithographers Ass'n of So. California, Mrs. H. S. Lund, Mrs. Norman G. Stodick and Norman G. Stodick, Graphic Arts Institute, San Francisco. 24. Mr. and Mrs. David Rapport, Rapid Roller Co. 25. A. Titgemeyer, Crane Howard Lithograph Co., and Mike Gardner, Stecher-Traung Lithograph Corp.

MODERN LITHOGRAPHY

RESULTS OF THE GOLF TOURNAMENTS, 35th L. N. A. CONVENTION, DEL MONTE, CALIF. JUNE 4-7

EVENT	WINNER	PRIZE	PRESENTED BY
1st Low Net	H. T. Gardner	Traveling Bags	Crocker-Union
2nd Low Net	Geo. Kindred	Portable Radio	H. D. Roosen Ink Co.
3rd Low Net	Paul Goodell	Kodak	Crescent Ink & Color
4th Low Net	G. E. Loder	Coffee Service	Crescent Ink & Color
5th Low Net	J. N. Valiant	Sports Apparel	Everett Pulp and Paper Co.
6th Low Net	Harris Browne	Wallet	Western Lithograph Co.
1st Low Gross	A. E. Roth	Wrist Watch	Schmidt Lithograph Co.
2nd Low Gross	B. N. Saville	Kodak	A. Carlisle and Co.
3rd Low Gross	Jack Wolff	Sports Apparel	Independent Pressroom, Inc.
4th Low Gross	H. N. Johnston	Golf Goods	MODERN LITHOGRAPHY
5th Low Gross	Lloyd Wilson	Sports Apparel	Geo. La Monte & Son
6th Low Gross	C. W. West	Wallet	Western Lithograph Co.
Best Ball on 14th Hole	H. N. Johnston	Wallet	Western Lithograph Co.
	H. W. C. Browne	Golf Goods	Geo. La Monte & Son
1st Low Net	W. H. Merten	Tea Set and Tray	Louis Traung
2nd Low Net	R. A. Gates	Luggage	Calif. Ink Co.
3rd Low Net	H. S. Lund	Luggage	Lehmann Ptg. & Litho. Co.
5th Low Net	E. H. Wadewitz	Coffee Service	Sinclair & Valentine Co.
5th Low Net	Carl R. Schmidt	Lounging Robe	Schwabacher-Frey Co.
6th Low Net	R. Wrenn	Wallet	Western Lithograph Co.
1st Low Gross	S. Armstrong	Portable Radio	Schmidt Lithograph Co.
2nd Low Gross	B. M. Carlisle, Jr.	Portable Radio	Schwabacher-Frey Co.
3rd Low Gross	L. H. Jackson	Caddy Bag	Sinclair & Valentine Co.
4th Low Gross	H. Behrens	Sports Apparel	Everett Pulp & Paper Co.
5th Low Gross	W. F. Cornell	Lounging Robe	Everett Pulp & Paper Co.
6th Low Gross	H. Brintall	Wallet	Western Lithograph Co.
First Couple	R. Schmidt	Wrist Watch	Zellerbach Paper Co.
	W. E. Steege	to Each	
Second Couple	Ed. Epsen	Portable Radio	W. Va. Pulp & Paper Co.
	C. W. Frazier	to Each	
Third Couple	M. Saunders	Sports Apparel	Blake, Moffitt & Towne
	C. Hillers	to Each	
Best Individual Net Score	H. G. Salzgeber	Silverware	Fuchs & Lang Mfg. Co.
Best Ball on 17th—Members	L. H. Jackson	Wallet	Western Lithograph Co.
Best Ball on 17th—Guests	R. A. Gates	Wearing Apparel	Everett Pulp & Paper Co.
Best Individual Gross	P. E. Backmann	—	Rapid Roller Co.
Presidents Prize	P. L. McIlfree	Cocktail Service	E. H. Wadewitz
Browne Memorial Prize	N. Powers	Caddy Bag,	H. W. C. Browne
		Irons and Woods	
Women's Putting 1st Prize	Mrs. Loder	Sports Apparel	Everett Pulp & Paper Co.
Women's Putting 2nd Prize	Mrs. Stratford	Gloves	Harris-Seybold-Potter Co.
Women's Putting 1st Prize	Mrs. Johnston	Sports Apparel	Hammer Dry Plate & Film Co.
Women's Putting 2nd Prize	Mrs. Fairbanks	Gloves	Harris-Seybold-Potter Co.
Women's Putting 1st Prize	Mrs. L. Traung	Sports Apparel	Hammer Dry Plate & Film Co.
Women's Putting 2nd Prize	Mrs. Pilz	Gloves	Harris-Seybold-Potter Co.
Women's 1st Low Net	Mrs. Isham	Silver Tray	Jersey City Printing Co.
Women's 2nd Low Net	Mrs. Burroughs	Tea Service	Blake, Moffitt & Towne
Women's 3rd Low Net	Mrs. Gates	Fitted Case	E. H. Wadewitz
Women's 1st Low Gross	Miss Traung	Silverware	Harris-Seybold-Potter Co.
Nearest 14th Hole	Miss Traung	—	George Madden
2nd Nearest 14th Hole	Mrs. Gates	—	George Madden

streamlined "Daylight," pride of the Southern Pacific, up the California coastline to Salinas, thence by bus to Del Monte. It was on this last lap that the first hitch in the smooth running machinery of the tour management threatened to develop. A strike had tied up scores of Greyhound busses. Their

luck held good, though, and they went through without mishap. Harry Porter avoided possible confusion by flying up.

As if he had not already done enough to assure the success of one of the most enjoyable and enthusi-

astic conventions the L.N.A. has ever had, Louis Traung presented each visitor with three bottles of native California vintage — hand-somely packed in a box on the inner lid of which was a picture of the Traung twins, Louis and his late brother, Charles. It was a generous and touching remembrance.

The

SCHOOL MARKET . . .

By

Elmer J. Anderson*

Another discussion of the wide possibilities offered by the schools for the sale of lithography. In April under the same title George Ramage, of *The Instructor*, described what national advertisers were doing through the use of lithographed advertising in the schools. This month, Mr. Anderson, an educator, takes up another angle of the school market and describes what the schools need from the lithographer.

EDUCATORS have often been accused of lack of imagination because they do so little with printing in the schools as a means of putting across their ideas. However, an imagination, no matter how fertile, can't operate in a vacuum. School people can't imagine what reasonably priced printing is likely to do for them, for the printing trade itself has done practically nothing to educate the educators. The imagination of our educators will only begin to operate after printing's products (with costs) have been brought to their attention.

I, for one, can now see the immense potentialities that printing, and especially offset printing, has for schools, but I see those potentialities only because I have struggled for the past five years to publish an up-to-date lively and readable school newspaper on a very limited budget. I'm not by any means advocating that school men should follow my example in order to understand what printing can do for them, because, believe me, I wouldn't wish the struggle I've had, with costs, suitable means of reproduction, etc., on anyone. I merely call attention to my experience, because it was by accident that I acquired it. No lithographer came to me and explained how it would be

possible for our school to publish a daily paper by the offset process. Quite the contrary, I spent months figuring ways and means alone. I was determined to make our high school paper a vital organ within the confines of our school, but much of my time and energy could have been saved had some lithographer had the creative selling ability or the initiative to come to me first. I was a "hot" prospect but no lithographer bothered to look me up. There must be hundreds in schools all over the country like me.

As a matter of fact, we couldn't put out our daily paper by any method other than offset, for we wanted as much of it done at school as possible, as part of the educational program. We had plenty of good typists

in school to prepare copy for reproduction by offset. They were students and the work was excellent training. By typing our copy we were able to divide the work into about 12 units, so with four typists reporting each of three periods daily we were able to keep a pretty good deadline and that with only a \$400 investment. Imagine the alternative—four linotype machines with a four to six thousand dollars expenditure. And even with four machines we wouldn't be able to get out the work as fast as we do with typewriters, in spite of the fact that we must retype every article twice in order to justify the columns. So you see we were naturals for offset and, I repeat, there must be hundreds like us—just natural set-ups waiting for the lithographer to come along and start the ball rolling with advice and service.

Of course it is doubtful whether the average advisor to a school publication would want to run his own shop. My interest in printing started in college as a crusading student editor. I didn't have to lock-up the forms in the shop, but I did it nevertheless because I wanted the very latest stuff in the paper, which usually meant Sunday work in order to cover the Saturday football games. I couldn't get the printers to come down on Sunday, but they did let me have a key to the shop.

The four page lithographed insert, opposite, is taken from Custom Printing Company's (Chicago) recently published forty-six page promotional booklet, designed to sell the firm's facilities in the creation of new ideas, original copy, design, artwork and typographical arrangement. In the words of Peter A. Levine, president of Custom, its chief aim is to show letterpress-minded buyers the high quality of offset. Custom Printing Company added offset to its letterpress equipment in 1938. Since then its business has increased 400 per cent. Over 60 per cent of its present volume is turned out on offset presses.

*Advisor to *The Daily Pinion*, McKinley High School, Honolulu, T. H.

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AND A SHOWING OF

CUSTOM PRINTING COMPANY CHICAGO

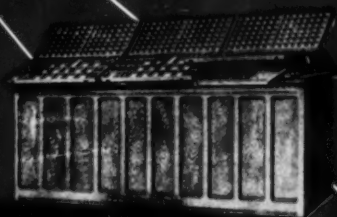
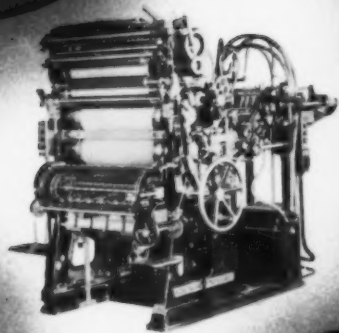




PHOTO BY GORDON COSEEN COURTESY MARSHALL FIELD & CO.

PICAS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
72 POINT

HEADLINER \$12

Also available in: 84 96 120 144 POINT

RALEIGH CONDENSED GOTHIC

48 POINT

GOOD FACE FOR!

60 POINT

OFFSET \$123

Also available in: 72 84 96 120 POINT

AGENCY GOTHIC

48 POINT

A PUNC

Also available in: 24 36 72 POINT

UMBRA

48 POINT

SOLD \$1

INCHES

1

2

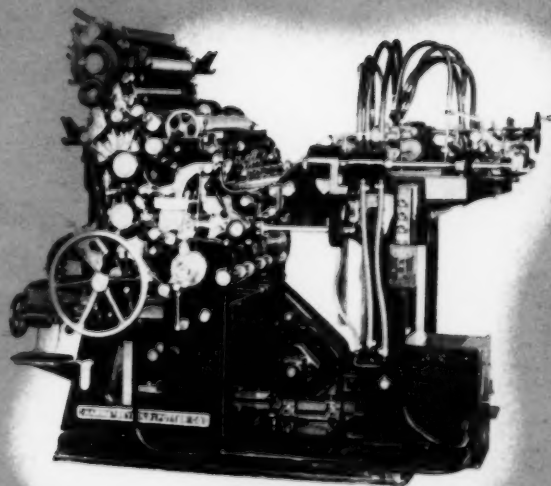
3

Also available in: 24 30 36 POINT

BETON

Novelty and juicy blacks are the making of many a printed job. As many effects can be achieved from the types on these pages as your imagination will allow. Othello, Beton, Neuland and Ballon have a decided poster feel and are better when used with a boldness of copy and layout. Use Stencil for novelty-Agency and Raleigh for style.

1940



As a reminder of the purpose of this book, we give you one last showing of a Harris 17" x 22" offset press, the type of press on which the Custom Printing Co. printed this specimen book. Your job on this modern press in the house of Custom Printing assures you that the results will be uniformly good and the process, offset lithography, guarantees you economies on certain types of work impossible in any other process.

This little girl so evidently appealing to our gentlemen friends of the picture, is our second example of a regular albumen halftone, this time in outline and printed against a solid tint in the second color. The ogling males on the page are line shots combined with the same halftone. We hope there is an idea here for your next offset printed piece in two colors.





*"Threefold the stride of Time, from first to last;
Loitering slow, the Future creepeth---
Arrow swift, the Present sweepeth---
And Motionless forever stands the Past."
---Schiller*



THIS INSERT IS TAKEN FROM THE 1940 "*Fleur-de-Lis*", ALL-SCHOOL YEARBOOK OF THE FORDSON HIGH SCHOOL, DEARBORN, MICHIGAN. ALL WORK IN THIS 160 PAGE ANNUAL, INCLUDING VARITYPING, WAS DONE BY THE STUDENTS IN THE PHOTO OFFSET CLASSES.

These personal experiences may not interest any one except myself, but I relate them to show why it was natural for me to want to experiment with a new medium of printing to get out our daily paper. The bulk of school publication advisors are still women, and they haven't the smell of printers' ink on their fingers. However, many of them also would like to put out a daily paper, for being educators, they just naturally want their efforts, educationally speaking, to count for more than they now do with the weekly sheet.

Here of course is where the lithographic salesman should enter the picture, with his portfolio under his arm, with a full explanation of how offset printing is ready to come to her assistance. But a lithographic salesman rarely enters, for the average salesman just doesn't understand the needs of the school. He just doesn't seem to know the language of the schoolmam.

IN THE past ten or fifteen years a decided shift in emphasis has been made by our educators. Previously, schooling consisted of taking examinations on a number of specified text books. Now, progressive educators look upon the child much as a sculptor looks upon a piece of clay. Certain rough edges must be smoothed off. Under this concept we look upon education as a series of experiences which are all aimed at molding the piece of clay into as perfect a model as possible.

New methods of instruction to further this molding process have thus been invented to fulfill the new aims thus set up. This has meant, in most instances, that *local material* must be studied, collected, written, and printed. No longer do four or five assignments from four or five nationally standardized text books do. If it is found, for instance, that certain character traits need development in the young people of a given school, no ready-made text will do, even if it is available. Localized examples and specific leading questions have now taken the place of generalized dissertations. The emphasis now is on making the student aware of his

immediate environment by first-hand study so that he will be able to see, in perspective, his place and that of his fellow students in that environment, thus opening his eyes to his duties as a social being. Actual participation as a member of society—whether it is publishing a newspaper or governing a community is the best possible means of cultivating the student's social awareness.

Locally written material has thus become a distinguishing hall-mark of progressive education. The lithographic industry should realize what that means. Such material has to be duplicated. How will it be done? Offset? Sure, why not?

The "high cost of printing" has been the usual answer given by school men when asked why they duplicated a given bit of text book material by means of a mimeograph rather than by the offset method. But if you ask these same educators what the bid was for lithographing the material, they look puzzled, for 90 per cent of them never heard the expressions "offset lithography," "lithographic type printing," "offset printing" or "planography," to say nothing of understanding what they mean.

So it becomes evident why educators don't use printing more. They just don't know that a complicated ruled form can be reproduced more reasonably by offset than by any other. As a matter of fact, the average educator doesn't want to be bothered with the technical aspects of printing. He would much prefer to deal with someone who can assume the role of expert in this field. He is used to dealing with experts and accordingly will lend an attentive ear to someone who not only knows printing, but has a general idea of what the school is trying to do.

Nor is the average educator adverse to allowing a fair profit for printed work. He would just like to know what items of expense went into the bid. There has been altogether too much secrecy on the part of the printer in preparing quotations. The educator has a general idea of cost accounting and is particularly on the defensive if the printer fails to tell him how his figures were obtained.

The offset salesman should realize that school printing is a much wider field than usually supposed. Progressive education has brought into existence the need for local text book material as I have pointed out. We, at McKinley high school, for example, are continuously publishing pamphlets for the students, and more of this work will be printed as time goes by. School directories, catalogues, brochures on the work of the school for visitors, pamphlets illustrating a particular student activity, are just a few of the jobs besides the regular office forms that are waiting to be done. But these jobs won't be done until school men have been taught what the photo-offset process has to offer them. Reasonably priced work also means new jobs for the lithographer, for the school usually must be content with mimeographing when they would much prefer something better. In fact, school printing is like a woman and her clothes problem—she never has enough.

Has the lithographer fully explored the possibilities of the school paper field? I, for instance, wouldn't be content with anything else but a daily, but there are thousands of advisors who would be satisfied with a weekly or monthly. Has any one suggested to them that they could have as many halftones as they wanted by use of the photo-offset process? Students like pictures. School children are no different from the millions who buy *Life*, *Pic*, *Look*. What would happen if an offset printer would persuade a school to put out a pictorial weekly? Would the students support it? You bet they would!

WHY hasn't the offset printer gone after more of the school annual business? Some schools do use this process, but why aren't there more? After seeing a copy of the University of Utah's yearbook, no one could honestly say that an offset printed annual is inferior to the usual run. Utah's yearbook, lithographed on an offset enamel paper, certainly shows what can be done by the offset process.

(Turn to page 77)

POINT-OF-PURCHASE

THE best word picture I can paint to explain the functions of point-of-purchase advertising is to compare it with the professional ringers of a circus. At a given signal from the barker, professional ringers, gathered in back of a crowd, start gently but firmly pushing them to the box office. The psychological effect is that the people in front, feeling the pressure of the people in the back, think that everybody is anxious to get into the show. So they dip their hands into their pockets for the proverbial quarter and rush in for a good seat.

Now, point-of-purchase advertising is the professional ringer for all other advertising media. It puts the pressure on the consumer to convert his impressions and desires received from all other advertising media into actual sales. Point-of-purchase does this in the store directly at the point-of-sale. *It is the only medium that can accom-*

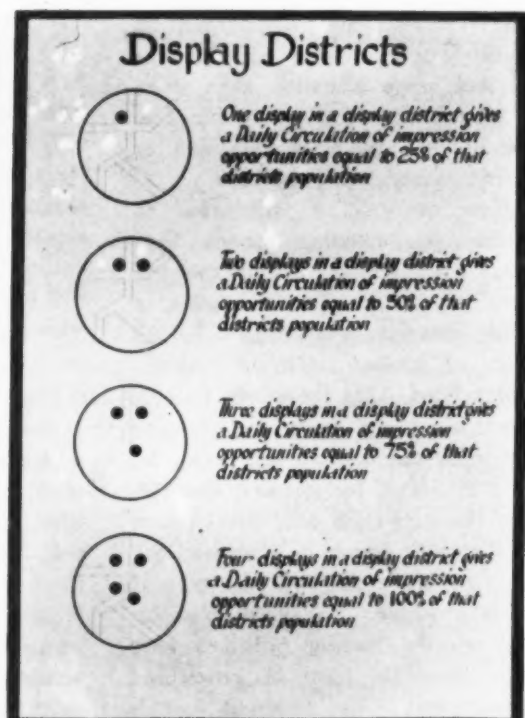
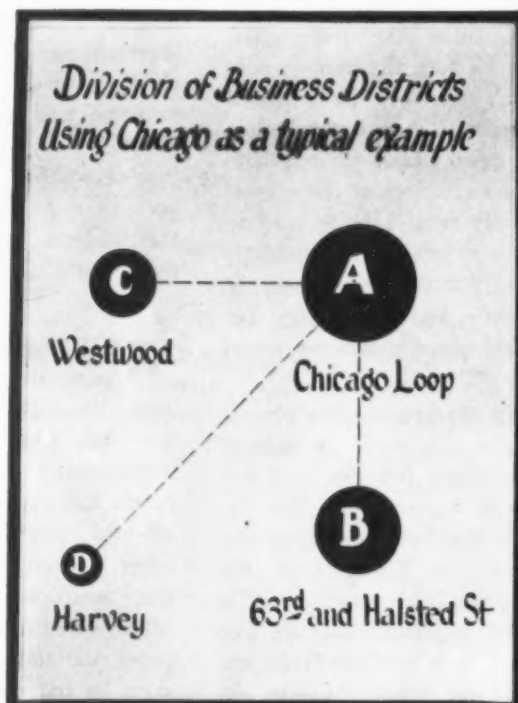
plish this. Point-of-purchase advertising is also the *final* reminder, reviving all other advertising impressions of a product. It displays the merchandise, creating eye appeal in many colors, and shows off the product to its best advantage.

No other advertising medium incorporates the combination of sales appeal that point-of-purchase offers. This is not to imply that point-of-purchase advertising *alone* can do an advertising job exclusive of all other media. Experience has proved that no advertising medium is, in itself, so potent that its value cannot be enhanced by coordination with other forms of advertising. But, conversely, no national advertising program should be considered complete without the intelligent incorporation of a properly coordinated point-of-purchase program.

If general advertising could be made

so powerful that its reader (or listener) would sustain undiminished desire for the possession of the advertised product and keep in mind exactly what to ask for at the store, point-of-purchase advertising even then would be an essential part of the merchandising scheme, because it would be used to discourage last minute attempts to switch the prospect's interest to a substitute product. Many people have been impressed by the advertising of a particular product but forget its name when they arrive at the store to make the purchase. In many instances, because of this, the clerk switches them to some substitute brand which means that the advertiser of that particular product has unwittingly created a sale for a competitive product. Point-of-purchase advertising is the *insurance* that guarantees that the money spent by the advertiser on other advertising media will bring results.

Chart 1, right, illustrates the typical pattern of any retail trade market, in this case Chicago, showing the central business district (A), the secondary business district (B), the neighborhood business district (C), and the outlying business district (D). By determining this pattern of retail trade outlets, window display spaces are classified and located according to productivity. Chart 2, far right, illustrates the formula for determining the percentage of coverage received in a display district through point-of-purchase advertising.



ADVERTISING...

... its place in the rounded advertising program, together with formulas for measuring its circulation and market coverage.

It augments and consummates all other media. It argues against substitutes.

One of the most important types of lithographed displays used for point-of-purchase advertising is the window display. It can be an action, flasher, or static display. It can be designed to spot the merchandise or it may be a plain card telling the story of the product. It is important because it gives a definite impression to all who pass a store. The object of window display advertising is, of course, the development of a display that instantly will become a positive traffic signal, controlling the flow of consumer traffic passing in front of each retail store. It should, by its forcefulness,

By H. P. Simons*

stop the flow of pedestrian traffic and then, by its convincing merchandising ideas, copy and illustration, convert the "passer-by" in to the "turner-in" so that he will stop and shop.

Counter displays add personality to, and show the product off, to best advantage. The chain stores proved some years ago that when goods were moved from shelves to the counter, sales pyramided in some cases as much as eight times.

The next logical step in aggressive point-of-purchase advertising was the

introduction of a counter display on the counter with the product. In other words, placing an auxiliary salesman in the store to cooperate with the retailer and his clerks, who, though their intentions be of the best, cannot push and promote every one of the thousands of items that make up the stock of the average retail distributing outlet. This auxiliary salesman occupies a prominent place on the dealer's counter and delivers the advertiser's own carefully prepared sales message to the audience in the store.

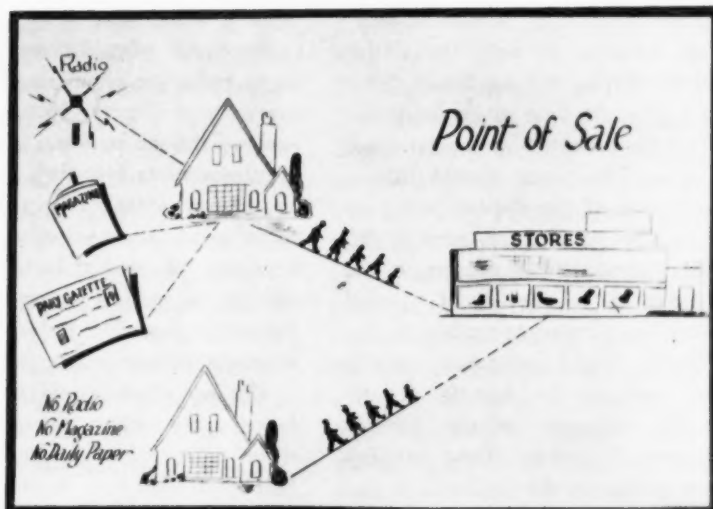
Floor stands and islands allow the display of heavy and bulky goods in large quantities where there is no other

Chart 3, below, left, shows the ratio of the various intensities of point-of-purchase advertising related to population. Chart 4, below, right, is a graphic representation of the necessity for the advertiser to present his message at the point-of-sale, despite the use of other media, in order to obtain maximum results, since in the final analysis sales are made in stores.

*Sales Promotion Manager, Chicago Cardboard Co., Chicago; before The Chicago Federated Advertising Club.

Number of displays required for minimum, normal 1st and 2nd intensity coverage according to population

Population	Minimum 25% Daily Circulation	Normal 50% Daily Circulation	1st Intensity 75% Daily Circulation	2nd Intensity 100% Daily Circulation
5000	1 Display	2 Displays	3 Displays	4 Displays
100,000	20	40	60	80
1 Million	200	400	600	800
50 Million	10,000	20,000	30,000	40,000
100 Million	20,000	40,000	60,000	80,000



adequate space (in the window or on the counter) to display them. Furthermore, the introduction of floor stands has eliminated the old homemade boxes which the dealer used, and which, incidentally, detracted from rather than set off the merchandise.

Wall hangers and frames have a very definite place in point-of-purchase advertising and are used for identification of merchandise, the institutional advertising of the manufacturer combined with a sales message of the product.

Because of competition for window and counter space, each advertiser should give serious thought to using wall hangers or frames as part of his point-of-purchase program. In many instances a frame has greater permanency and more attraction with less space competition than the counter or window display.

Every conceivable type of display is used at the point-of-sale. Some persons cry waste. Without this point-of-purchase advertising there would be far greater waste of the money spent in other media. Does the advertiser ever consider the number of lost sales and how much each lost customer costs because he did not advertise at the point-of-sale?

Intelligent distribution of point-of-purchase advertising is one of the most important factors towards a successful conclusion in doing an advertising and selling job with this medium. A display should not be sent to the retailer unheralded and camouflaged in a plain cardboard container. At least a letter, preferably carrying a printed reproduction of the display and explaining its particular significance and advantages, should be written in advance advising the dealer when this display will reach him. This would give him time to get ready for it and have a window or counter space available. The carton should have a reproduction of the display pasted on the outside so that on receipt the dealer immediately recognizes it. In the event the display is of unusual construction, complete setting-up instructions should accompany it. In many instances it is best for the advertiser's salesman or the jobber's salesman to deliver these displays when calling on the retailer.

What About Waste?

A DISADVANTAGE that has been erroneously attributed to point-of-purchase advertising is waste. No advertising medium is entirely devoid of waste; no advertising medium is 100% productive; in all types of advertising there is waste in some form or other. If we analyze the reasons for the small percentage of waste in point-of-purchase advertising, we find that it is not inherent in the medium itself but, rather, because of the misuse of it. No manufacturer who presumes to operate on any basis of scientific factory management would contemplate the production of a new item without considerable forethought and planning. Yet these selfsame manufacturers' intelligent planning of point-of-purchase advertising is oftentimes conspicuous by its absence.

One of the most important considerations that is often omitted by the manufacturer is the dealer's reaction to the display piece. If the dealer does not like the size, or the art work, or the copy, or the sales message, or the construction, that display has little chance of getting into the window or on the counter, or on the floor of that store—but it does have an excellent chance of finding its way to the furnace in short order. Oftentimes the advertiser is too anxious to crowd too many ideas into a single display. As a result, it happens that no single point stands out impressively. On examination the dealer realizes this and notices the lack of attention value and chooses another display in its place.

Therefore, it is obvious that the fullest effectiveness of a display program will be more fully appreciated by the dealer when a systematic analysis precedes the planning of the various units of display. Included in this analysis should be ideas for gaining attention; ideas featuring manufacturing aspects; ideas for helping the consumer make correct selection; ideas for featuring the product in use; ideas to identify the product prominently; ideas for creating quality, fashion, appetite, economy, or human interest appeal.

The advertiser should not expect a large space when his merchandise offers little profit margin unless the display is designed as a cooperative

unit to include other more profitable products. This is also a consideration when the potential volume of his merchandise is small. Advertisers sometimes make the mistake of expecting to get space for seasonal products during their off-season. As a result their display is more often than not, relegated to the wastepaper basket. The advertiser whose previous display was a complete flop is certainly not going to be received with open arms a second time.

The subject of waste in point-of-purchase advertising has been and still is the "theme song" of the advertiser who did not intelligently plan it and also, in some instances, of those who sell competitive media to safeguard their slice of the advertising budget.

The drug store is the most highly competitive store for display space. Thousands of items are included in its merchandising range. By this token, space is a highly competitive factor. The Institute of Package Research has completed a survey canvassing a selected group of retail drug stores located in ten widely separated states, namely: Arkansas, Connecticut, Illinois, Kansas, Louisiana, Minnesota, North Carolina, Pennsylvania, Utah, and Washington to determine the percentage of display material actually placed on display in relation to the amount sent to the druggists. The results were as follows:

Counter Display	61%
Floor Stands	76%
Window Displays	71%

When you realize that point-of-purchase advertising material received these high percentages of showings in such a highly competitive space, we can definitely dispose of the fallacy that point-of-purchase material is usually relegated to the wastepaper basket or the furnace.

The Point-of-Purchase Advertising Institute, Inc., of Chicago, recently conducted a survey in which over 2600 retailers were personally interviewed. The survey developed the fact that displays were almost entirely used one or more times and were preserved for possible further use.

Creates Good Will

Displays at point-of-purchase have other functions in addition to that of

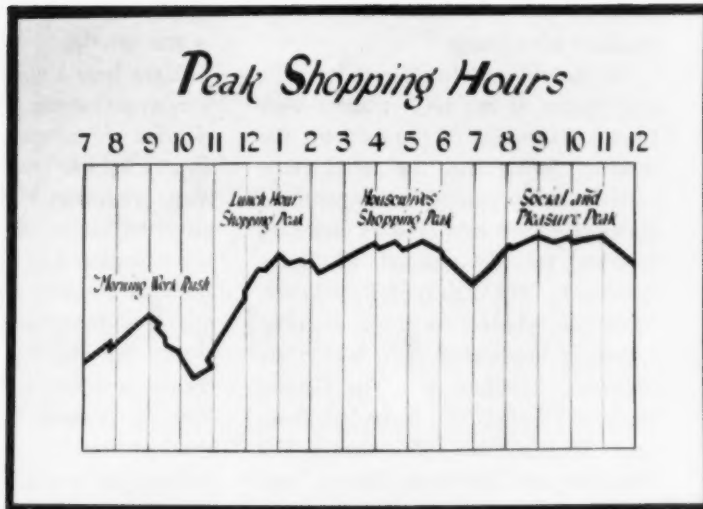
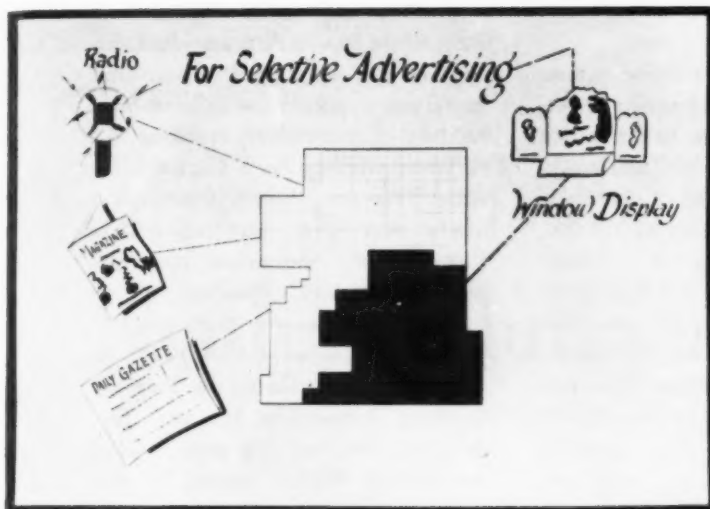


Chart 5, left, represents graphically how point-of-purchase advertising can be directed, without loss of circulation, which is often the case with other media, to that section or division of a retail market which contains actual or potential users of the advertiser's merchandise. Chart 6, right, shows the shopping peaks in the average eighteen-hour period from 6 A. M. to midnight. Throughout this period point-of-purchase advertising is constantly selling the merchandiser's goods.

capitalizing on the sales impetus created by general advertising. They have the function of creating dealer goodwill and demonstrating that extremely valuable "something" which the dealer calls cooperation. Displays supplied to dealers or installed in the dealers' windows or on their counters by manufacturers begin to earn their "keep" even before they actually start to sell the product to the consumer. The advertiser may be an aggressive user of newspaper, radio, and magazine, yet the dealer may not be cognizant of this. However, he cannot help but realize the cooperation of the manufacturer when he actually receives point-of-purchase material which he oftentimes personally handles. Point-of-purchase material is a definite, physical factor which ties the dealer more closely to the advertiser. The significance of this can be more thoroughly appreciated when we realize that the sales of from 20 to 80 percent of all merchandise sold by all outlets are definitely influenced by the man behind the counter.

Circulation and Coverage

AS WE all know, other advertising media is sold on its circulation and market coverage. The advertiser has been educated to buy advertising on this basis. Any advertising medium offered him which he cannot qualify from the standpoint of circulation and

market coverage he eyes rather suspiciously and does not give it the same thought and serious consideration that he does the known media. Point-of-purchase advertising is thought by some to be in this particular category. However, anyone who has made a serious study of the research report, "Window Display Circulation and Market Coverage", should be able to analyze comprehensively the results obtainable through the use of this medium. Unfortunately, very few people have had the time available to make an analysis or a crystallization of this research and therefore they have not been able to benefit by its findings.

The field work for the National Window Display Research was done by John Paver, under the direction of Dr. Miller McClintock, for the Advertising Research Foundation of the Association of National Advertisers and the American Association of Advertising Agencies. The research* took place over an eighteen-month period, in nineteen different cities and communities ranging in population size from fifteen thousand to three-hundred thousand—the smallest being Morristown, New Jersey, with a population of 15,000, and the largest Portland, Oregon, with a population of 300,000. The individual movement of over two million people was checked in the field.

*All statistics quoted from Window Display Circulation & Market Coverage by permission of The Advertising Research Foundation.

Formulas developed during the course of the research were used to convert actual field observations into statistical totals accounting for approximately forty-nine million personal movements. More than twenty-one thousand retail outlets were recorded. Over sixteen thousand windows of retail outlets were subjected to complete analysis for size, shape and other characteristics.

The window displays which fall into this category are used largely by the following type stores:

- Apparel
- Cigar
- Confectionery
- Drug
- Fruit & Vegetable
- Furniture
- Grocery & Meat
- Hardware
- Liquor
- Radio
- Electrical Appliance

To arrive at the number of window display spaces, we find the census of American business shows that there were over 1½ million retail stores in the United States in 1935, each store having an average of 1.9 window display spaces, which gives over three million window display spaces in the country. Assuming the average life of a display is one week, there are 156 million available window display spaces a year. It is important to remember that these figures are for win-

dow display spaces only and do not include all the other types of point-of-purchase advertising.

To classify and locate window display spaces of the retail trade outlets from a standpoint of productivity, the research found that the retail trade pattern of any market is composed of outlets grouped into clusters and held together by the channel of traffic movement. The density and productivity of these clusters are classified in the following business districts which are illustrated in Chart 1: The Central Business District, The Secondary Business District (or Districts), The Neighborhood Business District, and The Outlying Business Districts. Using Chicago as a typical example, the Central Business District, of course, is the Loop district. It is the heart of the retail business, the center of employment, and the focus of traffic. The Secondary Business District (or Districts) are a localized miniature of the Central Business District and as a typical example in Chicago, I have chosen 63rd & Halsted Streets. However, in a city this large, you all are familiar with the many more secondary business districts. The Neighborhood Business Districts are locations where there is sufficient concentration of population to support local stores. I have chosen Westwood as one of the many in Chicago. The Outlying Business Districts are composed of residential and sometimes industrial sections in which retail outlets occur. Again, we have many in Chicago. I have chosen Harvey as a typical example.

For simplicity in making their research, they subdivided all of the business districts A, B, C, and D, into display districts. A Display District is composed of ten display window spaces. The number of display districts in a business district depends on the size and population of that business district. If the Central Business District has, for example, 200 window display spaces, there would be twenty display districts in that area.

Their formula for determining the percentage of coverage received in a display district is as follows: One display in a display district gives a daily circulation of impression opportunities equal to 25% of that district's population. Chart 2 represents a dis-

play district showing the increase of circulation using 1, 2, 3 or 4 displays in that district.

Right here I want to define impression opportunities. Impression opportunities are comparable to circulation figures used by newspaper and magazine publishers. When a publisher states he has a circulation of 200,000, the advertiser's analysis is that a minimum of 200,000 people will be given the opportunity to see his advertisement. In checking consumer movements to obtain impression opportunities in relation to window display, the movement of only near-side pedestrians was taken into consideration. Automobile traffic, bus traffic, and far-side pedestrian movements were entirely discounted.

One display in a display district is termed minimum intensity coverage or one-quarter showing. Two displays in a display district gives a daily circulation of impression opportunities equal to 50% of that district's population. Three displays in a display district give a daily circulation of impression opportunities equal to 75% of that district's population. This is called first degree intensity coverage or three-quarter showing. Four displays in a display district give a daily circulation of impression opportunities equal to 100% of that district's population. This is called second degree intensity coverage or a full showing. The more displays in a display district, the greater the intensity of impression opportunities.

For a basis of discussion, the average population of a display district is approximately five thousand. To further illustrate the application of this principle, applying it to population, various intensities of coverage may be obtained by the ratio shown on Chart 3. The number of displays shown in this chart are a general average and would fluctuate depending on locations. This should not be taken literally but is more of a general guide from which the advertisers' requirements may be determined.

One display in a display district of 5,000 population would give 1,250 impression opportunities daily, which is equivalent to 25% of that district's population. In an area of 100,000,000 population, 20,000 displays—one dis-

play in a display district—will give 25,000,000 impression opportunities daily, while 80,000 displays—four displays in a display district—will offer impression opportunities daily of 100,000,000. Conservatively speaking, the minimum showing for a display is one week. Therefore, these 80,000 displays would offer seven hundred million (700,000,000) impression opportunities during a week's showing.

THE recent survey of over 2600 retailers, conducted by the Point-of-Purchase Advertising Institute, Inc., developed the fact that over 76% of the utilized displays remain in windows from two to four weeks and 8.9% for a period in excess of four weeks.

While the quantities of displays mentioned might sound exaggerated, I wish to quote from the research a few of the types of stores listed and the total number of each, giving the number of window display spaces available.

There are approximately 69,000 apparel stores with 137,000 available window display spaces.

There are approximately 15,000 cigar stores with 25,000 available window display spaces.

There are approximately 56,000 drug stores with 119,000 available window display spaces.

The total number of grocery, meat, fruit and vegetable stores is approximately 394,000 with a total estimated number of window display spaces of 708,000. With this imposing number of window display spaces available to the advertiser in the various retail outlets, the quantities of displays needed for complete coverage will, in some instances, exceed the 100,000 figure.

To obtain the cost per thousand circulation of displays, let us take the metropolitan area of Chicago with an estimated population of approximately five million and let us decide we need first intensity coverage which would be three displays for every display district, or three displays for every 5,000 unit of population. That would call for three thousand displays. Assume the cost of the displays, including shipping and installation, totals \$3.00 per unit, we would have a total cost of nine thousand dollars (\$9,000.00).

(Turn to page 69)

THE CHEMISTRY OF coating solutions and etches

By E. Bruyning*

A FINISHED lithographic plate has certain areas that attract water and repel oil, while others attract oil and repel water. This property is essentially physical, but is brought about by chemical action. In the various steps of plate making, chemicals and chemical preparations are used to give certain desired results. In this article we will concern ourselves solely with the role that these chemicals play.

Counter-Etches

It can be safely said that 98% of the lithographic plants use either hydrochloric or acetic acid as the counter-etch. The majority of the 98% use hydrochloric acid despite the fact that acetic acid is theoretically far superior. There is a definite reason why most lithographers prefer hydrochloric acid. A solution of hydrochloric acid spreads quickly and evenly over the entire plate and does a fairly good job of counter-etching, regardless of the experience of the operator. Acetic acid, on the other hand, does not spread evenly and only an experienced operator gets good results. This undesirable feature of acetic acid can be easily remedied, however, by adding a suitable wetting agent to the counter-etch. A wetting agent is a chemical that reduces the surface tension of a liquid and thereby promotes its spreading over the surface of a substance or allows a substance to be

readily wetted by such a liquid. You have undoubtedly noticed that if you let a drop of water fall on a dry metallic plate, or for that matter on any flat surface, the drop does not spread out, but retains a more or less flattened semispherical shape. If a suitable wetting agent, however, is added to the water, the drop will spread considerably more and, theoretically, it is possible to make that drop spread until the water is only one molecule thick. In other words, it is theoretically possible for a drop of water to cover a plate that is 5 ft. x 5 ft. But due to the fact that the water layer has become so thin it will appear as if the plate has not been wetted at all. However, what can be done theoretically has no bearing on the results we can obtain practically.

A formula which we have found to give very good results as a counter etch, using acetic acid, is as follows:

Acetic Acid (glacial).....6 oz.
Water1 gal.
Aerosol O. S. 100%.....60 gr.

So far we have only considered acid counter etches-despite the fact that alkalies also make suitable counter-etches. There are numerous alkalies that can be used for this purpose. A typical formula is as follows:

Water32 ozs.
Monoethanolamine 1 oz.

This makes a stock solution. To make the actual working counter-

etch take one part of stock solution and anywhere from one to four parts of water depending on local conditions and the degree of cleaning that has to be done. Counter etching with an alkali has certain advantages. It does not effect the grain as much as an acid does but at the same time effectively removes the oxide. There are several companies that put alkali counter-etches on the market.

Pre-Etch

A properly counter-etched plate has too great an affinity for the coating solution, and in order to diminish this the surface condition of the plate should be slightly altered. This process is called pre-etching. A suitable pre-etch solution is made as follows:

Gum Arabic Solution 10°

Baume32 oz.
Ammonium Bichromate120 gr.
Phosphoric Acid 85%1 oz.

This solution is virtually a sensitizing solution and of the same nature as the coating solution which will be ultimately used. The main difference, however, is that it is not quite as hard after it has been exposed to light as the coating solution, and that it washes off more readily.

Inasmuch as pre-etching is a procedure not usually followed in the average lithographic plant, we wish to describe here the technique of its application and use.

After the plate has been thorough-

*Techno-Chemical Products, Inc., New York.

ly counter-etched, the pre-etching solution is applied over the entire area of the plate with a camel's hair brush that is used solely for that purpose. The solution is allowed to act for a few minutes and then thoroughly flushed with water and removed as thoroughly as possible with a wad of cotton. Even after this removal a microscopically thin film of the pre-etching solution will remain adhered to the plate; and it is on top of this microscopic film that the coating solution is applied.

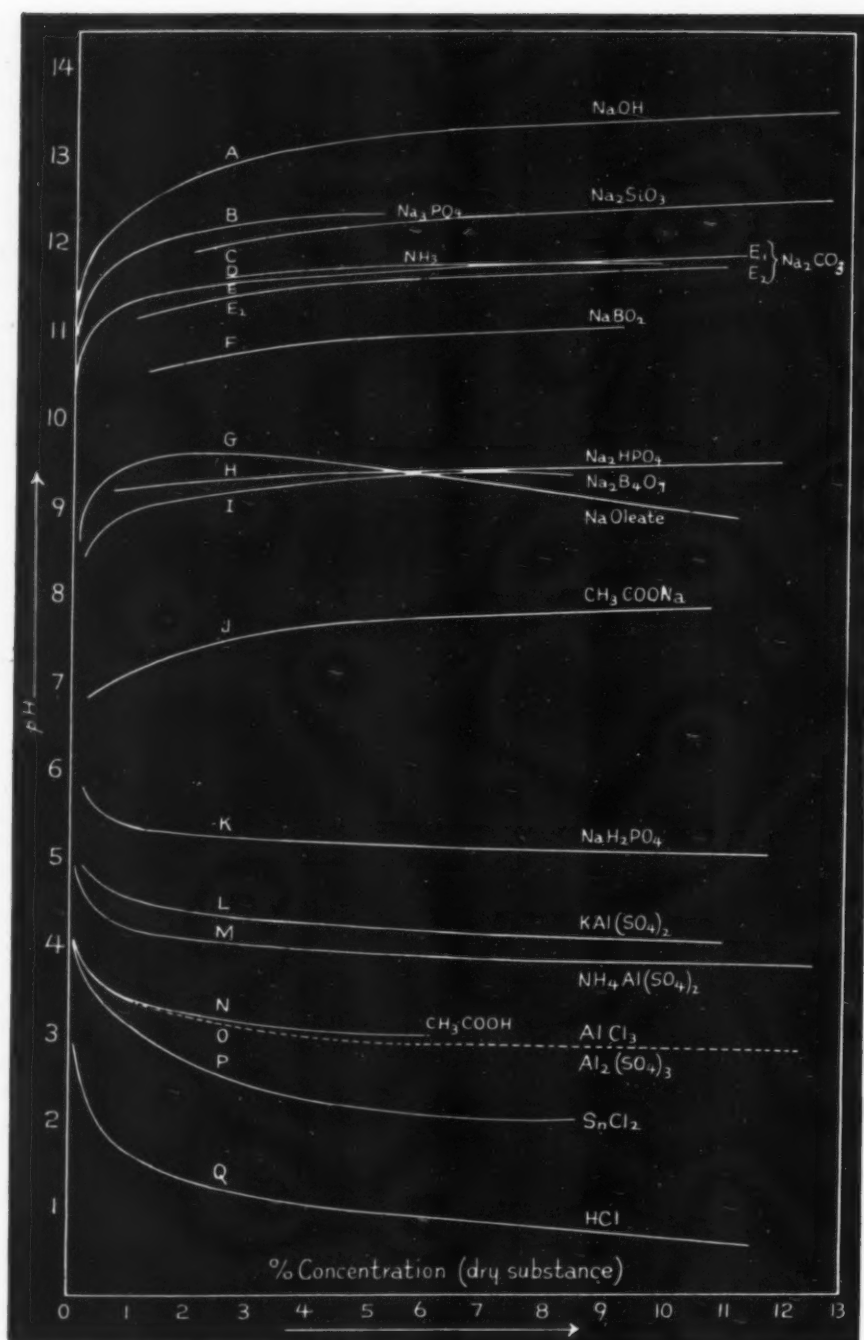
Coating Solutions

Any coating solution consists essentially of a colloidal solution that is properly sensitized with a sensitizing medium and for best performance is held at some definite pH. We can therefore readily see that in order to understand the chemistry of coating solutions, we must thoroughly understand what colloidal solutions are, what constitutes proper sensitizing media, and have a knowledge of pH.

Colloidal Solutions—When a solid is dissolved in a liquid, the solid becomes reduced to molecular dimensions and the molecules disperse homogeneously through the molecules of the liquid. This is called a true solution. The solid that is placed in solution is called a solute, the liquid in which it is dissolved is called a solvent. So much for that.

Now let us consider another condition. Suppose we take some chalk, grind it very finely, and mix it with water. We will get a milky "solution" which on standing allows the chalk to settle to the bottom. The finer the chalk has been ground, the longer it will take for it to settle out. This is called dispersion, because no actual solution has been effected. Intermediate between a through solution and the type of dispersion just mentioned, we can have another condition where the particles are so fine that it takes them an extremely long time to settle out, if ever. It is this type of solution that is called a colloidal solution.

There are two types of colloidal solutions. The first, in which in-



The curves illustrate the pH values of solutions of a few common acids and alkalis. In order to understand the chemistry of coating solutions it is essential that pH be understood. pH expresses numerically the degree of acidity or alkalinity of a solution, with 7.0 as neutral. Hence, anything greater than 7.0 is an alkali and anything less than 7.0 is an acid.

finitesimal parts of solids are dispersed throughout a liquid, this type is called the suspensoid type of solution, and another type in which infinitesimal parts of liquid are suspended and mixed homogeneously with microscopic particles of solids. This latter type of colloidal solution is called the emulsoid type of colloidal solution. In lithography, we deal solely with the emulsoid type of colloidal solution.

BEFORE we go any further, we wish to point out that these two types of colloidal solutions can be readily identified by the facts that the suspensoid type has a viscosity only slightly higher than the liquid, whereas the emulsoid type is considerably higher. Of course, we should not lose sight of the fact that the amount of solids dispersed through the liquids plays an important role in determining what the

ultimate viscosity will be. To elaborate on this, let us consider the following:

If we take a 1% dispersion of chalk in water, no matter how fine the chalk is ground, the viscosity of the "solution" is practically the same as that of water. On the other hand, if we allow 1% of gelatin to disperse in water, the viscosity of the "solution" is approximately 29% higher than that of water. It is obvious that if we make 50% dispersion of chalk in water, especially very finely ground chalk, the viscosity of the "solution" will be greater than that of water, and by the same token, a 50% "solution" of gelatin in water may appear as a solid, or is entirely unobtainable.

We have not reached the stage where we can discuss the various colloids that are suitable for colloidal solutions and coating solutions. They are: gum arabic, gelatin, albumin, casein, and various vegetable proteins, such as soya bean protein.

In addition to the substances enumerated above there are many other so-called colloids that can be used for coating solutions. If shellac for instance is treated with ammonia it becomes water soluble and makes a suitable colloid for plate coating. There are also many resins, synthetic polymerized products and other substances which are also suitable. It stands to reason that with such a large selection it is not very difficult to make a coating solution that is far superior to albumin. The only thing that has hampered the average lithographer in perfecting a better plate sensitizer is the fact that he is afraid to experiment or that he lacks the knowledge. This article gives him all the basic knowledge he needs and there is really nothing to be scared about. The worst he can do is spoil a couple of plates. It is very unfortunate that the writer for obvious reasons can not give very specific instructions how to make an ideal coating solution but if anyone really studies this general outline he will find many ways of improving his plate making department.

Sensitizing Media—The chemical that is usually employed as the sensitizing medium in coating solutions is

ammonium bichromate. Theoretically, there are many other chemicals that are capable of acting in the same manner, but not quite as satisfactorily, for various reasons, viz., all the halogens (chlorine, bromine, iodine and fluorine). Furthermore, all heavy metallic salts that can be dissociated by the action of light. Ammonium bichromate falls in the latter group. When light strikes a suitable colloidal solution that contains a certain percentage of ammonium bichromate, the light splits the ammonium bichromate into chromium and ammonium particles that are electrically charged and are called ions. The chromium ions attach themselves to some colloidal particles which are located nearest to them and render them insoluble in water. This is what takes place when the lithographic plate is exposed to light.

At the same time, we should bear in mind that the dissociation of the ammonium bichromate releases ammonium ions, thereby making the locality where it takes place more alkaline than it was before. Now we come to this business of pH (hydrogen ion concentration).

pH—A liquid is either acid, alkaline, or it is neither, depending on whether the liquid is polar or non-polar. In coating solutions we deal with polar bodies solely. Therefore, we can modify the statement by saying that a coating solution is either acid, neutral or alkaline. Now what does that mean?

By definition in elementary chemistry books, an acid is a liquid that turns blue litmus paper red, and an alkali is a liquid that turns red litmus paper blue, while a neutral solution allows litmus paper to remain unchanged. This is probably the crudest explanation we can have, and really tells us nothing. The most casual reader will instantly become aware of the fact that some acids are really stronger than others, and that the same holds good for alkalis. This is quite true. The degree of alkalinity or acidity is expressed numerically as pH. The smaller the pH is of the liquid, the more acid it is; and the larger the pH, the more alkaline. A pH of 7 is neutral. Anything smaller than 7 is an acid, and anything larger

than 7 is an alkali. Exactly how the numerical values have been obtained is irrelevant and not within the scope of this article. Suffice it to say that we remember that the smaller the number below 7, the stronger the acid, and the higher the number above 7, the stronger the alkali.

The formulation of coating solutions—Before we can attempt to formulate a coating solution that is practical, we must understand more about the nature of the various colloids enumerated above, and know more about the percentage of ammonium bichromate necessary. Gum arabic is quite suitable as a coating solution, but the resulting image after exposure is fairly soft and cannot stand much abrasion. Gelatin gives even softer images, while albumin gives an image that is quite workable for offset lithography. Casein and vegetable proteins give extremely hard images. In our opinion, casein gives about the hardest. It is this property of casein that has put it in disfavor among lithographers. Practically any of these colloids should give good working coating solutions if all their properties are taken into consideration. Gum arabic and gelatin can stand a high proportion of ammonium bichromate, as much as 50% of ammonium bichromate based on the weight of actual solid protein dispersed. In reality, even a higher percentage can be used, but unfortunately, if more than 50% is used the ammonium bichromate has a tendency to crystallize out, while the film of coating solution is drying on the plate. With albumin, ammonium bichromate can be used to the extent of 1/3 of the weight of the albumin. In the case of casein, soya bean protein and other vegetable proteins, the weight of the ammonium bichromate should not exceed 25% of the weight of the protein.

We have shown above that the resulting image is soft or hard depending on the nature of the protein. It stands to reason, therefore, that we may be able to mix proteins in such a manner that the resulting image has the desired hardness.

There is another point that should be made clear. In the case of
(Turn to page 67)

quality type reproduction

begins with the repro proof

BY GEORGE T. LORD*

EVERY lithographer who has been in business twenty-five years or more is, of course, aware of the changes that have taken place in the industry during that period. Then there were only scattered plants, large and small, in this country and Canada. Then nearly all lithographed work was reproduced from stone; all, that is, except the cheap stuff which was badly done, and turned out too fast.

At that time I was, as I am now, in the trade type-composition business in New York City. I can't recall that I was ever then asked to set type for a lithographer. In those days the kind of work lithographers handled seldom required the use of type. The little lettering used was nearly always hand-drawn. It was not until about eighteen years ago that every now and then I was asked to supply reproduction proofs to lithographers, as well as for gravure printing. Since then the volume of this kind of work has increased rapidly.

I am frank enough to admit that the early reproduction proofs we made were pretty bad. We did not know what was required in the way of repro proofs and apparently the lithographers didn't either because they were not much help. But gradually, by trial and error, and by frequent consultation with lithographic platemakers, we began to learn what was needed. Meanwhile the few odd

The logical way for the lithographer to raise his standard of type reproduction—and it is this department of his work which has been the target for the letterpress industry's sharpest and most telling barbs, says the author—is through control of the repro proof by selection of the proper type face, paper, ink and presswork.

plants that constituted the lithographic industry in 1913 had grown nearly three-fold, and many of the early plants had doubled and tripled in size. Instead of a few words hand-lettered on the stone or on transfer paper, the lithographic industry now frequently calls upon the trade type compositor to set all the type and supply reproduction proofs for books and catalogs of a hundred pages or more.

We don't claim to know all that is to be known about lithographic reproduction proofs. There is one thing we do know, however, and that is every fault in a reproduction proof stands out like a sore thumb on the lithographed sheet. A perfect job of lithographic type printing can only

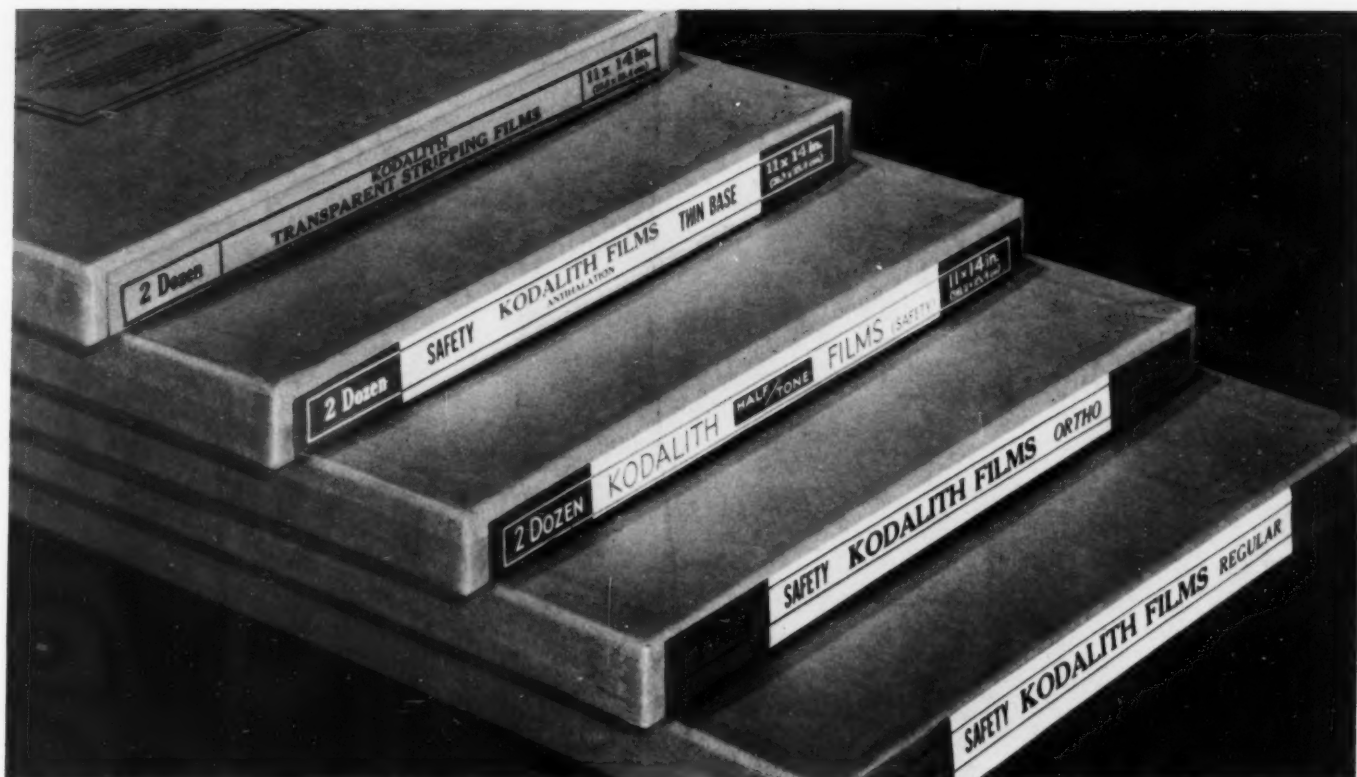
be obtained from perfect reproduction proofs.

In handling work for lithographic type printing we prefer to use individual type, either machine or hand set. The size may be 4 point or 144 point, and the type face may be a delicate script or the heaviest bold face. There is such a thing as good taste to be reckoned with, however. With typography good taste is but another name for legibility. Certain delicate scripts so often over-used by amateur typographers, while they can be reproduced in a satisfactory way, are not easy to read. A single line on a page is about enough. The foregoing also applies to over-bold types, a single line on a page being about all that should be required. There are,

Among the type faces that reproduce well by the litho process are the ones shown below.

Bookman	Binney	Bodoni	Century Old Style
Century Expanded	Cochin	Cushing	Gothics
Italian Old Style	Kennerley	Scotch Roman	

*Mr. Lord is president of New York Monotype Composition Co., New York.



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MODERN LITHOGRAPHY

of course, exceptions, but in the majority of cases a type face of medium weight will be found the most satisfactory. Bookman is the first that comes to mind. A more simple and unassuming type face has never been designed, and for that reason is perhaps the easiest to read.

There are many other faces that reproduce well. The following alphabetical list enumerates only a few of the many that can be used with good results:

Baskerville
Binney
Bodoni
Century (Old style, expanded, school book)
Cochin (avoid italic in the small sizes)
Cushing
Granjon (sizes larger than 6 point)
Gothics (All the many forms of gothic, as well as the san serif faces, light to extra bold, and the slab-serif faces such as the Girder, etc.)
Italian Old Style
Jenson
Kennerley
Scotch Roman

Of course, the lines of type must be evenly spaced and all be the same length, with every letter perfect, and all of uniform height. To obtain uniform height, which is the length of the type body from the printing surface to the foot, means frequent checking of the mold in which the type is cast, as well as checking the matrix for wear, and also making sure that all the type on a page is cast at the same temperature. Neglect of any of these details means that some of the letters may show too much impression, or too little, when the reproduction proof is made, and these faults will be apparent on the lithographed sheet.

Reproduction proofs are usually made on a universal type of press by a pressman who has had years of experience with work of this kind. He uses a dull black ink, and his problem, and this is where his skill comes in, is to secure a very light and even impression over all the page, as well as an even distribution of ink. This applies not only to a single page, but every line of type the job requires,

whether it be two pages or 200. He uses what is known as a "kiss" impression—just enough squeeze so each letter will be perfectly printed on the dull-coated paper used.

The foregoing was the procedure used in making the reproduction proofs of the text pages of *Litho Media*, considered one of the finest examples of type lithography that has ever been produced. From these proofs the lithographer made negatives of unusual sharpness. This sharpness was retained when the print was made on the press plate. With just the right impression, and the correct adjustment of the ink and water rollers, a highly skilled pressman was able to carry all the original sharpness over to the printed sheets. The result was a dazzling page—one that confounded all who had claimed that lithography could not produce type pages that were as sharp and as clear and as black as the very best letterpress printing, and best in this connection means not good commercial work only, but rich-looking, luxurious volumes like those produced by Bruce Rogers and D. B. Updike.

While *Litho Media* has been admired for the density and evenness of the color of its text pages, it has been criticised for the sharpness of the type, every delicate line of every letter having been reproduced just as shown by the reproduction proof. As one letterpress printer expressed it, "The pages dazzle the eye because of the sharpness of the type and lack of impression. If the job had been printed letterpress, using the same type and paper, there would have been a noticeable thickening of the hairlines of the letters, as well as the heavy strokes, with a consequent gain in legibility. In short, this book shows one of those rare instances where too much care and too much skill have been combined to produce a technically perfect result, but at the cost of legibility."

All the foregoing is hypercriticism, of course, as this printer admitted. If type faces such as the smaller sizes of Caslon reproduce too sharply, with hairlines that are too delicate, then choose a type of heavier weight and

more open design, such as Bodoni, or the larger sizes, 8 point and up, of Garamont, and Granjon. If 6 point must be used, then no mistake will be made if Bookman is used.

We do not have much demand from lithographers for proofs on transparent paper. These are usually used for gravure reproduction. The procedure is the same as for coated-paper proofs—great care with every detail. Of course, to secure greater opacity, while the ink is wet the proofs are dusted with metal bronze.

SOMETHING should be said about the cost of reproduction proofs. It does cost money to make such perfect proofs as were used for the text pages of *Litho Media*. In this connection, however, there is an old saying worth repeating here, which is to the effect that trifles make perfection, but perfection is no trifle. So it is with lithography. The cost of a perfect reproduction proof is a mere trifle when compared with the total cost of the job—probably averaging less than 5 per cent. If ordinary proofs are used, this percentage can be cut in half. Yet this slight saving will probably change the appearance of the job from that of high quality to mediocre grade.

As I view lithographic printing, especially from the type reproduction angle—and I am in constant touch with letterpress printers who are quick to point out its shortcomings—what the industry needs more than any other one thing is a much higher standard of type reproduction. The logical way for the lithographer to attain this standard is by control of the reproduction proofs, rather than to accept any sort of proof the customer may furnish. This control should start with the selection of the type faces, and include the paper and the ink used to make the proofs as well as the quality of the presswork. Thus the lithographer can make sure that the reproduction proofs will yield satisfactory negatives. The press plates from these negatives will cause no trouble on the press, and it follows that the final result will be type reproductions that are both clean and sharp.



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The book is conveniently divided into sections. Under Inks and Paper are included "Pointers on Printing Inks;" "Inks for High Speed" by George Cramer, Sinclair & Valentine Co.; "Hints on Gloss Ink Printing;" "Ink Problems and Their Solution;" "How to Buy Paper" by Harry B. Coffin; and "Book and Job Paper Sizes, Weights." Under Printing Processes are included "Printing Reproduction Methods;" "Identifying Reproduction Processes" by Ernest Schmatolla; "Printing Methods Detector;" "Comparative Reproduction Processes;" "Buying Lithography" by D. J. MacDonald; "Twenty-four Sheet Posters;" "Standard Poster Sizes" by Frank Fasullo; "Web-Fed Offset" by John B. Webendorfer; "Estimating Printing" by Fred W. Hoch; "Decalcomanias;" "Silk Screen Techniques" by Arthur C. Werback; "Trends in Silk Screen" by J. I. Biegel-eisen; "Lithography on Metal" by Felix F. Eberhart; "Typing for Offset;" "Principal Kinds of Presses;" "Chart of Printing Press Specifications;" and "Outline of Colotype."

The Dictionary of Paper. Published by American Paper and Pulp Association. Price, \$4.00.

This book has been prepared for American Paper and Pulp Association by a specially appointed industry committee working in conjunction with the Institute of Paper Chemistry. Its purpose is to revise and expand previous efforts along this line in order to give the industry

a thoroughly modern and more complete dictionary of the names, terms and expressions which it uses. It is not easy to classify and define paper terms, due largely to the fact that various geographical districts or different producer and consumer groups have developed their own phraseology. The situation is further confounded by the fact that new uses for paper are discovered almost daily and, depending upon the imagination of those concerned, innovations are either dignified by a new term or older terms are warped to meet the situation. While the temptation in compiling a book of this sort is to confine its scope in an arbitrary manner in order to avoid the laborious task of trying to include all conceivable terms, those responsible for the Dictionary of Paper have resisted this temptation admirably and, as a result, many paper terms are included that do not appear in earlier works. In addition to classification and definitions of pulps, papers, boards and paper-making treatments, a complete bibliography of magazine articles and books devoted to definitions of papers is included.

Practical Photo-Lithography. By C. Mason Willy, member of the technical staff of Hunter-Penrose, Ltd. Published by American Photographic Publishing Co., Boston. Price, \$4.00.

This is the third edition of a work which appeared a few years ago. During the comparatively short period, however, since publication of the first edition there has been a wide increase in the commercial application of photo-lithography as well as many improvements in technique and equipment. Likewise new associated processes are frequently being suggested. In this edition, the text material has been revised in the light of more recent developments of the process. However, no serious alterations have been made. From a rather lengthy list of considered additions, the following are some of the more important of those selected for treatment: Collodion emulsion, type transparencies by simultaneous direct and offset printing, projection apparatus, photo electric exposure control, reversal process on ready-coated plates, and single exposure half-tone negatives.

Photographic Facts and Formulas. By E. J. Wall, F.C.S., F.R.P.S., revised and largely rewritten by Franklin I. Jordan, F.R.P.S. Published by American Photographic Publishing Co., Boston. Price, \$2.50.

This book is a combination of many predecessor books on the subject and was

first brought out in 1924. The present edition brings it up to date. It is brought out in response to a continuous demand for a work of this sort that will give in convenient form the essential facts and formulas constantly used in photography. The years intervening since the previous edition have seen photography moving so rapidly that the book had to be practically rewritten to bring it up to date, although many of the old formulas that have proved their permanent worth have been retained, along with the host of new ones necessary to keep up with the procession. The book is intended as a working guide to practical photographers, giving them in easily accessible form, plain working directions and formulas for all the most commonly used photographic processes. It makes no pretence of imparting scientific information, which is readily available in many standard works dealing with that phase of the subject. Descriptive matter has been introduced only so far as it seemed necessary to give the reader a comprehensive idea of the processes for which directions and formulas are furnished, so that the formulas could be chosen and used more intelligently.

Folding Paper Boxes, An Aid to Profitable Packaging by James D. Studley, chief of the Pulp and Paper Section, Forest Products Division. Published by United States Government Printing Office, Washington, D. C. Price 15c.

This bulletin has been prepared for the purpose of answering as many problems as possible in regard to design, art work, color and printed message for the folding paper box so as to insure maximum visual appeal and attraction. It is not a technical publication nor is it meant to be a handbook on either the product or the industry, but is strictly a trade promotional publication designed to answer questions normally asked by the foodstuffs, cosmetics and hardware manufacturers with packaging problems, and by the economist or the student.

Introducing Paper by T. Brown. Distributed by Chemical Publishing Co., New York. Price, \$1.50.

This is an elementary book for those who buy and work with paper. It is intended to aid in the recognition of various types of paper and in the execution of rough and ready tests for quality without the aid of scientific instruments. The different kinds of papers are discussed and classified according to raw materials from which they are manufactured. The manufacture of paper is described in an elementary way. Means of measuring paper are given together with general notes on the printing and paper trades.

Advertising As an Occupation by Edwin W. Davis. Published by Science Research Associates, Chicago. Price, 50c.

This is another in the series of occu- (Turn to page 69)



Photo by Rodney D. Heetfield

By E. J. Ryan

EVERY day millions of glass packages containing foods, drugs, cosmetics, wines, liquors, chemicals and kindred products are sold over the counters of retail stores. Many of these are sealed with lithographed metal caps. To the average consumer, the lithographed design on a metal cap may present a pleasingly decorative effect which impels him, or her, to examine the package on which it is used and possibly purchase it.

The average consumer, however, rarely considers how the design is applied to the cap. But those familiar with lithography know that lithographing on tinplate (of which most metal caps are made) is done in approximately the same manner as lithographing on paper.

However, in lithographing tinplate to be used for metal caps there are problems, considerations and processes not common to any other division of the craft. In order to illustrate some of these, there is presented in

this brief article, information gained first hand from a firm which has long been, and still is, lithographing tinplate for the metal closures it produces. This firm is Phoenix Metal Cap Co., Chicago.

The Phoenix Metal Cap Co., celebrating its fiftieth anniversary this year, has been lithographing tinplate for 34 years. Possessing complete litho production departments the company has, within its Chicago plant, an art department for the making of preliminary rough sketches and finished drawings; a camera room for photographing finished drawings and making reverse positives on glass; a transfer plate department where all the plates used on lithographing presses at the company's Chicago and Brooklyn plants are made; and, of course, a press room, where inks are applied and dried on sheets of tinplate. The decorating department of the firm may be said to be literally an organization within an organization.

Since 1906, when the company began to do its own lithographing, the use of metal-capped glass packages has multiplied many times, and competition among them for the attention of the consumer has increased proportionately. Consequently, packers have striven for better appearing packages—more attractive labels, containers, cartons and closures, and, what is more important to tin lithographers as well as other package suppliers, they have demanded increasingly accurate matching of colors on all package elements. For example, one cosmetic manufacturer uses on all his packages a distinctive shade of rose. In order to maintain a color relationship between all his packages, this packer insists that the colors on molded jars, molded compacts, flint bottles (usually made of clear glass, but to which a colored coat may be applied), cartons, labels, tubes and tin caps all match closely.

Almost daily the tin lithographer is asked to duplicate a color which ap-

pears on a label or carton. This is admittedly a difficult job. First of all metal, unlike paper, will not absorb ink. Then too, tinplate is a shiny gray, while label or carton stocks range from white to brownish gray. These differences alone would make the same ink applied to paper and metal surfaces differ in color on each. In addition, inks applied to tinplate must be dried by passing through a drying oven; one pass being required for every color applied. On each such pass, heat changes the colors to some extent. Then, too, after all colors have been applied, a final coat of varnish or other protective substance is run over

the entire surface. This also affects the color. However, experience has taught the tin lithographer how to combat these difficulties. He is able, and does, produce colors on metal closures which accurately match those on labels and cartons.

TINPLATE for metal caps is lithographed in large sheets. To decorate the tinplate economically and satisfactorily, two important considerations are involved: (1) Designs for individual caps must be accurately lithographed on the sheets of tin so they will be in their proper positions when the caps are finally completed;

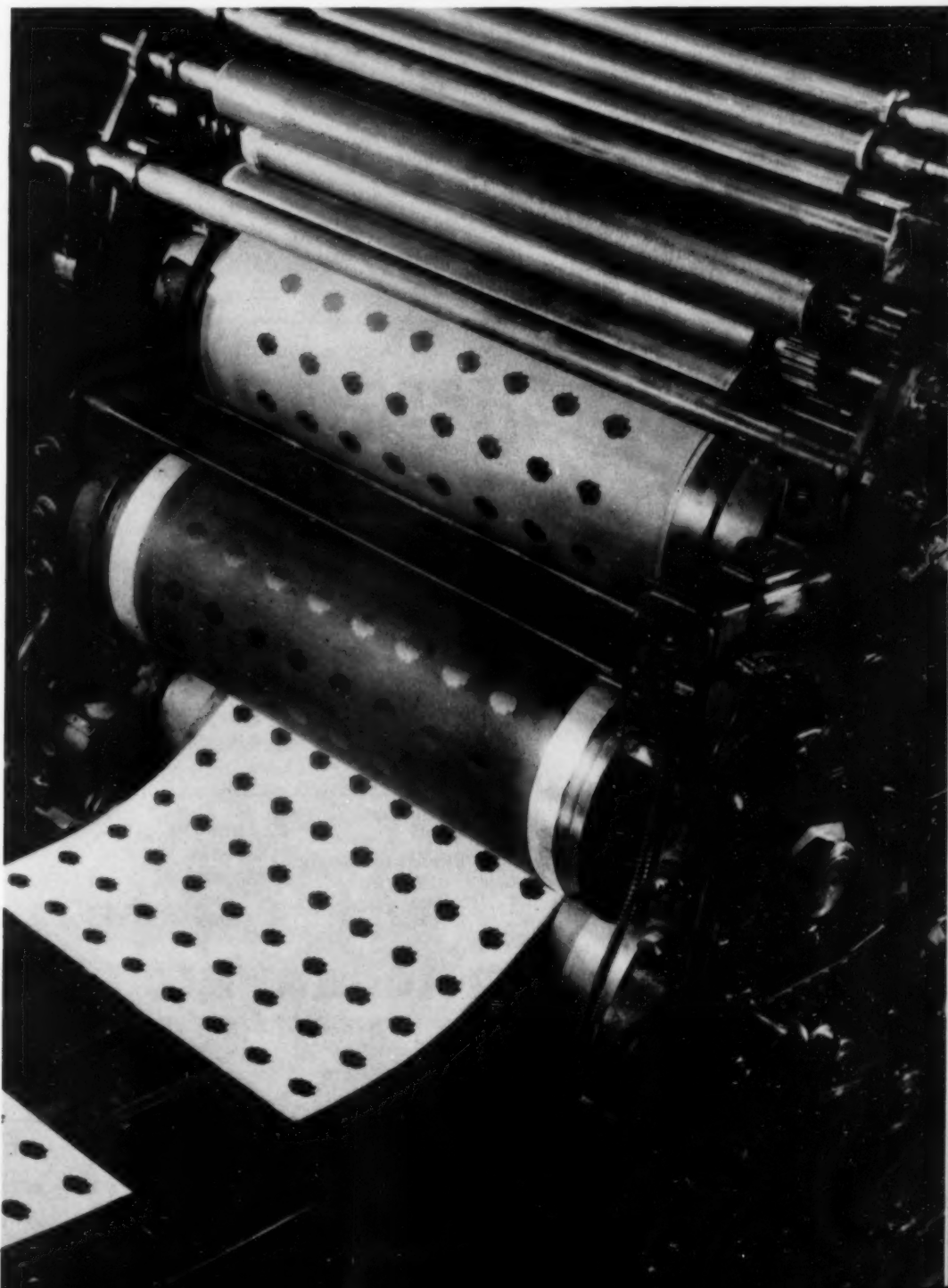
(2) the colors must be able to withstand the rigors of manufacturing and packaging operations.

Before the designs are lithographed on the sheets of tinplate, a layout is made for the proper spacing on the sheets. Since the number of caps punched from a single sheet of tinplate may vary from 20 to over 300, depending upon the size of the closures, this is an important job. The designs must be so spaced that, in punching, they will occur in their proper positions on the caps, which may be the center, the outside edge on top or the side skirt. Then too, enough designs must be planned for each sheet so

Phoenix Metal Cap Co., Chicago, celebrates its fiftieth anniversary this month—a half century in which it contributed the automatic baking oven to the metal decorating industry and helped to make the lithographed metal cap an indispensable part of modern packaging.

Photo by Rodney D. Heetfield

JUNE 1940





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the big news
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VALETTE LINE?

We might with pardonable pride add, "So is the whirler, the printing frame and the rest of the line". Proof of this is the fact that every lithographer that has seen our new models is enthusiastic about their many new points of superiority. Every change and improvement has been thoroughly tested under actual production conditions.

Modernize your plate making facilities now so you will have the advantage of all the latest developments.

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The automatic ovens used in the baking of Phoenix lacquers, varnishes and metal coatings . . . and in the oxidizing of litho inks . . . were invented and developed by Phoenix Metal Cap Co. They are used in the litho plants of many metal decorators throughout the world.



Photo by Rodney D. Heetfield

that an excessive waste of tinplate will not occur.

After the tinplate is decorated, it goes through a number of operations before it finally emerges in the form of finished caps, such as slitting, punching, threading, rolling (the edge of the cap) and knurling (the top of the side skirt to provide a gripping surface for application to and removal from the package). In addition, in the packer's plant the finished cap is subjected to the steel fingers of the capping machine and, when used on food packages, blistering temperatures in retorts and sterilizing. Colors used in lithographing must be hard and tough to withstand such punishment.

The drying of lithographed tinplate is a high-speed, automatic operation today, but it was not always so. Prior to 1915, sheets were removed from lithographing presses by hand and placed in racks one over the other, in a horizontal position. The racks were then rolled into large stationery ovens which were simply steam or gas heated rooms with tight doors. Baking for several hours at high temperature was required to dry the sheets. Every time the doors were opened, heat escaped.

Circulation within the oven was poor, resulting in uneven appearance of the color on tinplate. To keep lithographing presses in continuous operation, a great number of racks was required. A large amount of floor space was necessary to accommodate the ovens, and much time was consumed in handling and rehandling sheets.

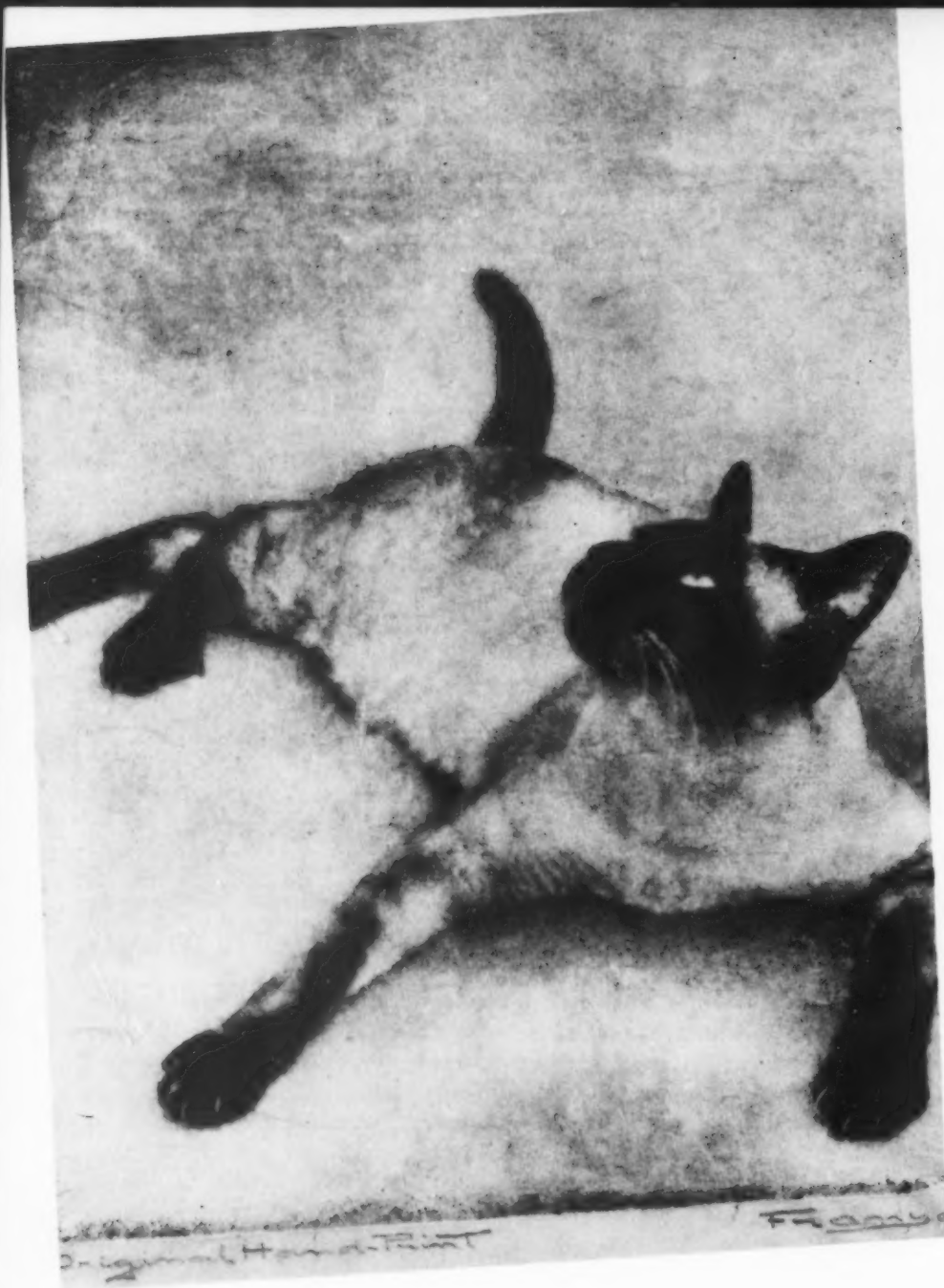
These obvious disadvantages of the stationery oven led to the development by Phoenix Metal Cap Co., in 1915, of the first automatic travelling oven for drying lithographed tinplate. It might also be mentioned that seven years previously the company introduced a similar oven for drying lacquered tinplate, which was also the first of its kind.

Although the oven used today is somewhat shorter in length and possesses a better heat circulating system, it is essentially the same as the original. It consists of a gas heated tunnel through which runs an endless conveyor. This conveyor is directly connected to and synchronized with the lithographing press, entirely eliminating hand feeding. Tin carrier brackets, about an inch apart, are riveted to the conveyor. Sheets of

tinplate are fed from the lithographing press to the brackets which turn them in an upright position and carry them through the oven. From heaters beneath the oven, heat is passed upward and through the sheets, and is then circulated back through the oven.

It requires about 6 to 8 minutes for a sheet of tinplate to pass through the oven, depending upon the speed of the lithographing press. During this short time the color is thoroughly dried and there is sufficient cooling space at the discharge end of the oven so that the sheet may be easily handled as it completes its trip. Then it is ready for fabrication into caps, or for the application of another color, if necessary.

Of course, in this brief article only the more important individual steps in the production of tin lithography for metal caps have been discussed. However they should indicate what a highly developed and specialized branch of the art tin lithography is within the plant of the Phoenix Metal Cap Co., and at the same time, add to the reader's appreciation of the scope and accomplishments of lithography.



ONE day about a year ago we overheard a book publisher say to another book publisher that what he was searching for to use as illustrations in his books were "photographs that don't look like photographs." He was a publisher of children's books. Being tolerant by nature, we concluded that the fellow was just overworked and in need of a rest, and let it go at that. However, recently we ran across the photographs on this page—which certainly in their unreduced, original state did not look like our idea of photographs—and we remembered the book publisher's remark. And the thought struck us: maybe there is a trend in photographic illustration away from realism. After years and years of striving after stark photographic realism maybe the pendulum has started the other way. Actually, we don't believe it has, but at the same time we couldn't help being impressed by the effects obtained by the photographs shown in illustrating animals, such as the cat and the puppies on the one page, architecture, such as the photographs of the Cloisters, and reproductions of oil paintings, such as the El Greco at the top.





Photo Hand Print

Franyo

The photographs were all taken by Franyo Studios, New York, and processed by what is described as the "Manugraph Process." There is nothing unusual in the way the photographs were taken. In fact, according to the originator of the process, an ordinary box camera can be used. The process is in the printing of the negatives entirely. No retouching is done, it is said. Claiming to be the sole possessors of the process in this country, Franyo Studios is finding an enthusiastic acceptance for its process among advertisers and some book publishers in search of new ideas. In our opinion, the process should be especially successful when used with lithography since it produces original copy most suitable for reproduction by that process.



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The Reprotype—A New Photo Lettering Device

A NEW development in the photolithographic field which has recently been brought to the attention of the industry is the Reprotype, a new photo-lettering machine, or photographic typesetter as its inventor describes it. The inventor, Louis Grudin, vice president of Hudson Advertising Co., New York, in discussing the new machine's application to lithographic work says that he was tempted to call his invention the Lithotype, so closely in his own mind was its application bound up with the lithographic art and industry.

As its name suggests, Reprotype sets lines of display type for reproduction, using no metal type and no proving press. A line of type is set on a composing board that resembles an artist's drawing board; this is slid under the lens of a camera apparatus; a marker is adjusted for the desired size; and the line of type is shot, resulting in a glossy photostat which fits the layout. Among the other accomplishments claimed for the Reprotype by Mr. Grudin are the following:

1. Sets straight lines or curved, slanted,

waved, stepped up or down, staggered, letter-spaced or close-spaced lines.

2. Sets to fit any size from 18 point to 144 point without any jumps in size as in the case of metal type, but simply to any length or height of line.



3. Repeats a line in as many different sizes as you please, without resetting.

4. Stretches or compresses a line of type, elongating or spreading in any one direction.

5. Sets "overhang" letters such as A, T, Y, V, W, L in close formation without kerning.

6. Sets in positive or negative (black lettering on white or the reverse).

7. Combines or "gangs up" different display styles on one line.

8. Sets and repeats decorative units, continuous borders, and oversize initials.

9. Permits designing or adapting your own type styles.

The Reprotype consists of three separate units—the magazine of type fonts, the composing board, and the special camera. A magazine contains a family of related type styles, each in caps and lower case, roman and italics, all in the 72-point size from which the camera enlarges or reduces. One magazine is said to contain 28 different alphabets of over 5,000 characters.

The composing board, which is the Reprotype equivalent of the hand compositor's stick, is designed to hold and align type printed on sheets instead of metal type. The camera unit makes a positive black-on-white print directly from the composing board, or a negative print when desired. It is calibrated for automatic size selection—from 18 to 144 point and holds a roll of 100 feet of film—and delivers photographic paper prints. The magazine system is sectional, allowing the addition of new magazines each containing an additional family of type styles. A set of six magazines will make one cabinet with a capacity of 168 different alphabets.

The first Reprotype actually in operation is the one built by the inventor and now in use at 21 West Street, New York, above the offices of the Hudson Advertising Company. It already has a complete magazine containing a family of 28 related alphabets.

Examples of Reprotype composition. The lines of display lettering were set to size according to requirements of the layout and were reproduced as they came from the camera, without retouching. Miscellaneous styles of type may be set without magazine change, it is said.

TROUBLE IN JULY Erskine Caldwell

Aa Aa Bb Bb Cc Cc Dd Dd Ee Ee Ff Ff Gg

A b C d E f G h I j K l M n o p q r S t U v W x Y z &

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IN AND ABOUT THE TRADE

Hold All-Day Session

The New York Photo-Lithographers Association, New York, held an all-day "share your knowledge" session on June 8th at the galleries of General Printing Ink Corp., New York. The meeting began at 10 A.M. adjourned for luncheon and continued throughout the afternoon. The "share your knowledge" session followed the same general pattern as the one held by the New York Association at the New York Advertising Club about a year ago. Questions asked by the audience were answered by a board of experts. Speakers were Robert J. Butler, Fuchs & Lang Mfg. Co., division General Printing Ink Corp.; George Cramer, Sinclair & Valentine Co.; Harvey Glover, Sweeney Lithograph Co.; Hugo Hanson, W. C. Hamilton & Sons; Charles Latham; Kenneth Martin, Harold M. Pitman Co.; R. W. Pattison, American Writing Paper Corp.; Al Rossotti, Rossotti Lithograph Co.; and I. M. Thorner, Agfa Ansco Corp.

Acquires Latham Litho

Jacob Kromberg, who for a number of years has been a prominent figure in the printing industry in New York City, and until recently was executive vice president of Publishers Printing Corp., has acquired the stock of Latham Lithographing and Printing Co., which a few weeks ago purchased the assets of the former Burland Co. Mr. Kromberg will serve as president of the new organization.

Julius R. Zimmerman Dies

Julius R. Zimmerman, 62, president of Foto Lith, Inc., Cincinnati, died last month after a long illness. Mr. Zimmerman, who was a director of the National Association of Photo-Lithographers and a director of the Miami Valley Lithographers' Association, was well-known to the lithographic industry throughout the middle west for the past forty years. He entered the graphic arts industry in Chi-

cago as a boy where he worked in a number of photo-engraving establishments. He became manager of Mid-West Color Offset Co., Dayton, Ohio, and when that concern was taken over by Reynolds & Reynolds, he became sales manager of the company's color offset division. In 1931 he founded Foto Lith, Inc., at Cincinnati.

ATF to Hold Type Sale

American Type Founders, Inc., Elizabeth, N. J., will hold its annual type sale during the months of June and July. The company announces that during the period of the sale a special discount of 15 per cent will be allowed on all standard type orders amounting to \$15.00 or more. Over 250 different type faces, including A.T.F.'s latest designs, are subject to the sale. In addition to the base discount of 15 per cent, additional discounts will be allowed for quantity purchases it is announced.

Establishes Ownership Claim

The right of a photo-lithographer to ownership of the negatives supplied him in order to make offset plates was established by the Circuit Court of the Province of Quebec last month in the case of Ernest Latter, offset printer of Montreal, plaintiff, versus Margo Printing Services, also of Montreal, defendant. The defendant company had refused to pay a bill for \$74.00 to the plaintiff for making a set of offset plates because the latter did not return the negatives which had been supplied him by the defendant for making the plates. It was the belief of the defendant that a trade custom had been established providing for delivery of the negatives by the photo-lithographer after plates had been made. However, the court held that in France, England and the United States the negative is the property of the photographer, barring any agreement to the contrary, and pointed out that there

Peter Arno's story of the bewildered and frustrated little man who wouldn't believe it wasn't done with mirrors was lithographed by National Process Co., New York, for a promotional booklet recently issued by National Broadcasting Co. in behalf of its Red Network results. It was lithographed in three colors.





Daguerre Would Be Amazed

could he but see the uses to which photography is now being applied, and if he could also see the improvements in photographic chemicals.

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was an analogy between the case of the lithographic printer and the photographer. The court declared that the situation was "analogous to the rights of the printer and the type with which he does his printing. No one would suggest that the type is the property of the customer."

Agrees to FTC Stipulation

James Bayne Co., Grand Rapids, Mich., engaged in the manufacture of photographic and printed products, has entered into a stipulation with the U. S. Federal Trade Commission agreeing to discontinue certain representations. In connection with the sale and distribution of its products, the company agrees to cease and desist from designating its gelatin printing process or any other collotype or planographic form of printing as "Bayne Gravure", "gravure" or "photogravure", or in any other way using the word or term "gravure" as descriptive of products which are not in fact made by the gravure (intaglio) process as understood and applied by the industry and the trade.

Inglis Heads E.L.A.

Robert P. Inglis, of New York, has been appointed executive secretary of the Eastern Lithographers' Association effective last month. He succeeds Malcolm McComb who has resigned. Associated with Executive Engineers, Inc., as an industrial planner for a number of years, Mr. Inglis is well-known throughout the printing and lithographic trades. His offices are located at 110 East 42nd St.

Address Clinic

The third in the series of Printing and Advertising Clinics sponsored by General Printing Ink Corp., New York, was held at the company's art galleries, 100 Sixth Avenue, New York, on May 28th. Speakers were Archie Burns, mechanical superintendent of the New York Herald Tribune on "The Mechanics of News-printing"; Gilbert P. Farrar, typographic consultant and designer, on "The Newspaper Format of Tomorrow"; Leonard Pinover, vice president of Intaglio Service Corp., on "Color Gravure in Newspapers;" and Austin



THE WINNAHS!

Stacey Stars, crack bowling team of the Reserve Lithograph & Printing Co. (Cleveland) Bowling League walked away with all honors in the season just closed. Jerry Stacey, center, displays the winning trophy. Playing members are shown standing. Their sponsors are seated, first row, as follows, left to right: J. L. Roser, general superintendent of the Reserve plant; Harry Falls, sales manager; Mr. Stacey; J. H. White, vice president; P. N. Calvert, president of Reserve; and E. M. DeMuth, sales department.

Thomas, production manager of J. Walter Thompson Co., on "News-paper Production from the Agency Angle."

Colson Opens Chicago Branch

U. O. Colson Co., Paris Ill., manufacturer of window displays, art calendars and advertising specialties, has opened up a Chicago branch office at 605 North Michigan Ave. Jack Wittrup is in charge.

Riecker Re-elected

William F. Riecker, president of Lenz & Riecker, Inc., New York, was re-elected president of New York Employing Printers Association, Inc. at the annual meeting last month.

David Mallory Dies

David Mallory, well-known printing supply trade salesman, of Chicago, died last month. Mr. Mallory, who was almost 70, had over a period of forty years, been connected with many mid-western and far western supply concerns. In recent years he sold second hand printing machinery.

Announce Speakers for Course

Subjects and speakers for the lectures to be given at the next Intensive Course in the Fundamentals of Lithography offered by the Lithographic Technical Foundation, New York, have been chosen. They are as follows:

Fulton MacArthur,— "The Three Major

Printing Methods Contrasted"; John McMaster, Eastman-Kodak Co.,—"Scientific Aspects of Black-and-White Photography"; Michael Annick, Rutherford Machinery Co.,—"Technical Features of Camera Construction"; Alexander Clair, Eastman-Kodak Co.,—"Scientific Aspects of Color Photography as Applied to Lithography"; Wm. F. Hauck, R. Hoe & Co.,—"Press Design"; A. Stull Harris, Harris-Seybold-Potter Co.,—"Technical Features of Press Construction and Care"; S. Karpeles, Imperial Paper and Color Co.,—"Technical Features of Dry Color Making as Related to Lithography"; R. J. Butler, Fuchs & Lang Mfg. Co., division of General Printing Ink Corp.,—"Technical Problems Associated with the Use of Lithographic Inks"; B. D. Stevens, Miehle Ptg. Press & Mfg. Co.,—"Press Operating Problems"; R. R. Lewis, Vulcan Proofing Co.,—"Technical Features of Blanket Manufacture and Care"; A member of the technical staff of Mead Corp.,—"Paper"; Joseph Mattiello, Hilo Varnish Co.,—"Varnishes and Inks"; and a member of the Lithographic Technical Foundation's Research Staff.

The technical lectures are in addition to practical instruction given in camera, platemaking and offset press work, stripping color correcting, and visits to lithographing plants.

Although the Intensive Course in the Fundamentals of Lithography, which is to be offered at the New York Trade School will not begin until July first, the registration for the 1940 class is now practically complete. Students are now enrolled from California, Costa Rica, Maryland, New York, Ohio, Ontario, Oregon, Quebec, Rhode Island, and Texas, indicating the general interest in the course.



WANT REAL *Color Separation* VALUE? Use **ILFORD "Pan" PLATES**

Why YOU Should Buy ILFORD!

- HIGHER UNIFORMITY
- LONGER LIFE
- BETTER COLOR SEPARATION VALUE
- BETTER QUALITY EMULSION
- CONTRAST ADAPTABILITY TO OFFSET PROCESS

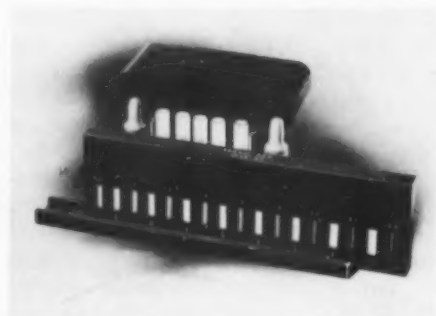
If your shop is enjoying the ever increasing amount of color "copy" YOU should investigate ILFORD PANCHROMATIC PLATES today! If you're near Chicago, just phone our well-known Graphic Arts Department to talk to men who KNOW the Graphic Arts — or if you're out of town, let us send you free samples along with new low prices on this famous brand of panchromatic plates —

Write for Your Copy of Catalog 44B

NORMAN-WILLETTS

316 W. WASHINGTON ST. CHICAGO ILL. Phone RANdolph 8300

TAYLOR *pH SLIDE* COMPARATORS



for
Control
of
FOUNTAIN
SOLUTIONS

Simple - Rapid - Accurate

Determinations are made by moving the slide containing the color standards in front of the test sample in the test tubes until a color match is obtained and then reading the pH from the values engraved on the slide.

All Color Standards carry an *Unlimited Guarantee*.

For zinc plates fountain solutions should have a pH of 3.8 and a bromphenol blue (pH 3.0—4.6) slide comparator is required. For aluminum plates the pH should be 4.6 and a bromcresol green (pH 3.8—5.4) comparator is required. The price of either set is \$15.00. In a wooden carrying case \$20.00. F.O.B. Baltimore.

Full information on request.

W. A. TAYLOR & CO., Inc.
879 LINDEN AVENUE BALTIMORE, MD.

BEN DAY, Inc.



118 East 28th Street, N. Y.

NEW EQUIPMENT AND BULLETINS

Mid-States Label Selector

Mid-States Gummed Paper Co., Chicago, is distributing a new label design "See-Lec-Tor", for lithographers to use to show customers and prospects new suggestions for label designs. The six most popular sizes of bottles and jars are pictured in outline and folded over to show, through a die-cut, twenty-four different label designs printed in two colors on twelve different samples and colors of Mid-States Really-Flat gummed paper. Copies available.

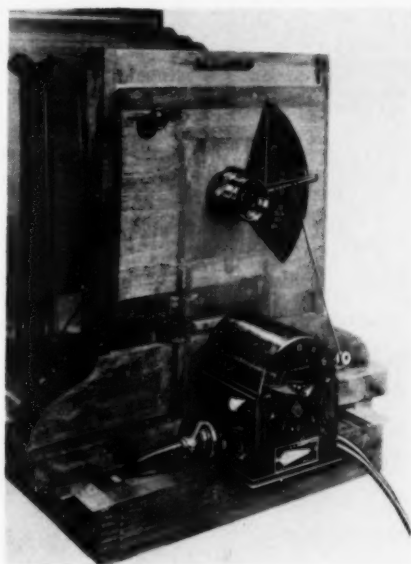
Douthitt Folder

Douthitt Corp., Detroit, has just issued a folder describing its temperature controlled sink for developing negatives. The folder calls attention to the necessity of uniform and correct temperatures for processing film, enumerating the undesirable results which are liable to be caused unless temperature is controlled. Among these are frilling and fogging, too rapid development, and increased strength of the reducing agent to a point which causes reduction of the silver salts on the entire surface of the emulsion, causing mushy dots. The results enumerated are caused by temperatures higher than 65 degrees, which is considered best for chemical action. On the other hand, if the temperature is too low, there is a hazard of underdevelopment, the folder states, since the action is delayed. The new Douthitt temperature control sink, which is designed to control the temperature of the developer, is constructed of stainless steel and is equipped with controlled refrigerator and heating units. The sink is also equipped with a patented automatic syphon and drain for washing. Copies of the folder available.

New Robertson Development

R. R. Robertson, Chicago, announces a new photo-mechanical apparatus designed to combine both the

timer and arc lamp control employed in photographing original copy for offset. The new apparatus, which is de-



signed to assure uniform negatives, is so arranged that the time of exposure and the diaphragm opening are automatically set. When the exposure has been completed, the lights automatically switch off. Further information available.

New LTF Bulletin

Lithographic Technical Foundation, New York, has just issued Technical Bulletin No. 3 entitled "Method of Conditioning Paper for Multi-Color Offset Printing", by Charles G. Weber and Martin N. Geib. No. 6 in a series of research reports on lithographic papers conducted by the U. S. Bureau of Standards, this latest bulletin describes a new method of using the conventional type of conditioning machine in order to bring the paper into equilibrium with the surrounding press-room atmosphere. The method described not only facilitates the correct adjustment of the moisture content of paper, it is said, but also increases the rate of conditioning. Furthermore, it is claimed, results can be achieved without the use of a separate room having independent atmospheric control. The method was developed by

technicians of the paper section of the U. S. Bureau of Standards through conditioning experiments at the Coast and Geodetic Survey. The price of the bulletin is \$1.00 per copy to members and subscribers and \$2.00 per copy to others.

The Foundation has also published a booklet entitled "Lithographic Technical Foundation, Inc., Its Origin and Accomplishments" which tells briefly how the institution came into being and summarizes its activities and achievements since its inception. Copies of the latter are available free of charge.

New Color Print Process

Photochrom Laboratory, Chicago, has developed a process which, it is claimed, for the first time permits accurate reproduction on paper of Kodachrome's full range of tones and colors. Up to now, craftsmen have had to work from the Kodachrome transparency itself. This procedure has had its difficulties and art directors have found the transparency method inflexible. A fine color print or carbro made from Kodachrome, however, has several recognized advantages.

It was in order to secure these advantages and at the same time provide more accurate reproductions that the process was developed. Frank Miller, who heads the new service, was for 3 years director of color photography at American Colortype. Before that he had been with Eastman Kodak for 10 years, where he did considerable of the pioneer work on the Kodachrome process. His present Chromura color print process is the result of 4 years experimentation.

Peninsular Paper Co., Ypsilanti, Mich., has just issued a portfolio containing specimen samples of its Peninsular Dubl-Color Duplex cover stock. Specimens available.

INKS

FOR SHARP IMPRESSIONS

Made by GAETJENS, BERGER & WIRTH, Inc.

Litho-Offset and Printing Inks

Standard offset and printing inks . . . process, gloss and special inks . . . yes, a complete galaxy of pre-tested inks that will meet your requirements.

P. S.—A reminder that on that next press run where a *real* intense black is required, try ECLIPSE SUPER-TEX HARD DRYING OFFSET BLACK.

Metal Decorating Inks

A complete line of standard and special inks available to meet every need of the metal decorator . . . inks that bake in the oven fast and true . . . inks that dispel fear of brittleness . . . inks that will truly show your customers product at its best.

Perhaps there is a special problem in your own plant where our experience may be of practical value?

Also Manufacturers of Varnishes and Dryers

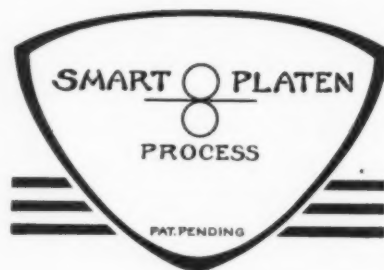
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BLANKET STREAKS?

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CAUSE & CURE of BLANKET STREAKS



CYLINDER TRUING
WITHOUT DISMANTLING

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A trial will sell when the product is

OKAY

Therefore we urge every lithographer
to send for samples of —

OKAY DEVELOPING INK

A time tested material with every quality a developing ink should have — also made for deep etch plates.

OKAY OPAQUE

The finest negative opaque on the market — consistency and satisfaction assured.

MASKING OPAQUE

A recent development, a water soluble opaque for masking on celluloid sheets; smooth flowing and non-sticking in humid weather.

REX OPAQUE (Red)

An opaque for paper films and glass, will not chip or crack, and dries rapidly.

All of these photo-offset specialties are manufactured and distributed only by

F. G. OKIE, Inc.

247 S. THIRD ST., PHILADELPHIA, PA.

or their agents. Also manufacturers of high-grade photo-offset inks, fine printing inks, compounds, etc.

Chemistry of Coating Solutions

(from page 45)

casein, dispersion cannot be effected with water alone, but hot water should be used, and in addition, a suitable alkali; for lithographic purposes ammonia water is about the best.

Before we give actual formulas, we should say that it has been empirically shown that the best pH for a coating solution is between $7\frac{1}{2}$ and $8\frac{1}{2}$; the lower values for the softer proteins and the higher ones for the harder proteins.

The following are representative formulas for albumin and casein. In the case of the others, formulation can be effected by a thorough understanding of everything that has been said so far, and by taking into consideration the fact that the viscosity of the resultant coating solution shall be practical.

Water (cold)32 oz.
Albumin (flakes) 3 oz.
Ammonium Bichromate 1 oz.

To this solution ammonia water may be added, but never more than is just sufficient to change the orange color to yellow. What actually takes place when the ammonia is added and the color changed, is that the ammonium bichromate changes to ammonium chromate. Ammonium bichromate splits up more readily into ammonium and chromium ions when subjected to the action of the ordinary white flame arc light. Ammonium chromate does not split up quite as readily under this type of light. It follows, therefore, that when ammonia is added to a coating solution the exposure will be longer than when no ammonia is used. Then why use ammonia at all? The answer is quite simple. Ammonia has a slight bactericidal effect, and coating solutions containing ammonia keep a little longer; but if too much ammonia is used, the ammonia attacks the protein and breaks it up (hydrolyzes) and after a certain amount of hydrolysis the protein becomes incapable of selective hardening under the action of light. Another advantage of ammonia is that if not too much of it is used, the coated plate can be used in a photo composing machine, in

other words it is not quite as touchy as to how long the operation of exposure takes after drying. To clarify it even more, if we have two plates, one coated with an albumin solution containing a little ammonia and the other coated with a solution containing no ammonia, the one containing no ammonia cannot be handled for as long a time as the one containing ammonia.

The following is a typical formula of a casein coating solution:

Water (hot)32 oz.
Casein 2 oz.
Ammonium Bichromate $\frac{1}{2}$ oz.

Stir well while adding sufficient ammonia, 28%, until the orange color changes to yellow. This change of color serves as an indication both as to the amount of ammonia water necessary to disperse the casein and the amount of ammonia necessary to change the ammonium bichromate to ammonium chromate.

The unfortunate part of a casein sensitizer is the fact that it uses ammonia and that the pH is rather high and therefore not only unstable but makes a rather firm bond with the metallic plate itself. In conclusion we would like to give another formula for albumin which we have found very satisfactory. It is as follows:

Water32 ozs.
Albumin $2\frac{1}{2}$ ozs.
Engravers Glue $\frac{1}{2}$ oz.
Ammonium Bichromate1 oz.

To this solution ammonia may or may not be added depending on local conditions and what is expected of the sensitizer. While we are on the subject of engravers glue we would like to point out that this is simply another form of gelatine and that besides engravers glue there are several types of gelatine available. Practically all proteins occur in various forms and are very readily modified.

Plate Etches

THERE are various plate etches that give very good results. In our experience the one advocated by the Lithographic Technical Foundation is the best. Inasmuch as the average lithographic plant has un-

doubtedly a suitable plate etch we will not give any formulas, except to state the following admonitions:

Refrain from using plate etches containing chromic acid. They are poisonous, even in handling. Anything a chromic acid plate etch can do, one containing ammonium bichromate can do also. In our opinion, you will avoid many headaches, improve your plates, if you use the plate etch recommended by the Lithographic Technical Foundation.

Most people fail to understand the role that the plate etch plays. After the plate etch has been applied to the plate and then flushed off, a thin film of acidified gum arabic solution remains on the area of the plate that is not covered by developing ink. This thin film enables the plate to work on the press with a minimum amount of fountain solution.

Developing Ink

Although this does not quite fall within the scope of this article, we think it should be mentioned. There is a great deal of talk about good developing inks and bad developing inks, and properly so, but just what is a developing ink? A developing ink is simply a dispersion of carbon in a volatile solvent containing some involatile oil. That sounds very simple, but the degree of volatility of the solvent, the amount of oil and the amount of carbon used are very important. A good developing ink is responsible for 50% of the success of a good plate. That fact should not be lost sight of.

Barron Collier Booklet

Barron G. Collier, Inc., New York, has just published "The Sad Story with the Glad Ending," a booklet which, through the use of illustrations, dramatizes the plight of an advertiser in search of the right advertising medium. A series of trials and errors are dramatized, in which there appear a villain called "Lost Sales", a heroine personifying the nation's consumers, and a hero called "Transportation Advertising." The story concludes with the traditional happy ending, with the villain destroyed by the hero and united to the heroine. Copies available.

A Sign of

High Quality



HYKLAS Transfer Paper

(LONGLIFE)

Technically Made in U. S. A.

FOR HYKLAS LITHOGRAPHERS

Years of demand for Transfer Paper manufactured in America has been becoming greater and greater and due to the unsettled conditions in Europe we have succeeded in accomplishing the manufacture of this paper.

During the last World War crisis we manufactured a TRANSFER PAPER which was tried, tested and proven to be the exact need for the Lithographic Transferer in America.

The custom of Siebold of always handling nothing but the best, assures you that this HYKLAS American manufactured TRANSFER PAPER will meet the requirements of the most critical and exacting transferer.

*WHY NOT ASK FOR TRIAL SHEETS
AND LET US QUOTE YOU?*

IMMEDIATE DELIVERY IN TWO SIZES:

26 X 33 and 33 X 46

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LENSES**
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"The Most Exact Tools"



ARTAR APOCHROMAT

f:9 to f:16

The ideal lens for color separation negatives. Color-corrected to produce images of the same size, to correctly superimpose in the finishing process. Focal lengths: 12 to 70 inches. New sizes 4" and 6" for color separation blowups from 35 mm. Kodachrome.

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Assuring freedom from distortion, this is the ideal lens for intricate subjects requiring an intense clarity of definition. Focal lengths: 8 1/4 to 24 inches.

GOERZ PRISMS

of the Highest Accuracy — For reversed negatives to save stripping the film, and reduction work.

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C.P. GOERZ AMERICAN OPTICAL CO.
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PLATE COATING SOLUTION

You can make a superior plate coating solution, which gives uniform results, and gives longer runs than albumin, for less than

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TECHNO-CHEMICAL PRODUCTS, INC.

226 LAFAYETTE STREET

NEW YORK, N. Y.

Telephone: WOrth 4-8248

Point-of-Purchase Advertising

(from page 42)

For a seven-day showing, this would give us a weekly circulation of impression opportunities of approximately twenty-six million. The cost per thousand circulation would be 34¢.

For a cost comparison, a 7-day full page advertisement in a daily Chicago paper would cost approximately \$20,000.00. The circulation for that period, using the total theoretical audience circulation of 4.1 persons to a home, would be approximately 25 million. On this basis, the newspaper cost would be \$1 per thousand circulation against the 34¢ per thousand circulation cost for window display.

There is much controversy about radio, newspaper, outdoor and magazine coverage completing the advertising job to the exclusion of all other media.

In the final analysis, sales are made in stores—not in street cars, buses, or in homes (with apologies to the Fuller Brush men). To complete the advertising impression, the advertiser's message must be presented at the point-of-sale in order to reap the value and obtain the greatest results from all other advertising media. See Chart 4.

The retail merchant naturally thinks in terms of selling his complete line. To do this he must make potential customers enter his store to become customers in fact. Any type of window display that helps accomplish this end is appreciated by the retailer, and it is only natural that he will push the product represented by this particular display.

There are conditions under which window display advertising replaces newspaper and radio advertising to obtain market coverage and increase sales volume. In some states—Alabama, Georgia, and Arkansas for example, and in many localized sections throughout the country, the consumer ownership of radio is as low as 39%.

By the same token—newspaper coverage is poor. Yet these consumers who do not have radio, magazines, or newspapers (refer to bottom of Chart 4), although not in the category of quality buyers, are buyers of basic necessities which come under the headings of food, shelter, clothing, transportation, etc.

By intelligent concentration in the right sections, advertisers have been able to penetrate these areas very successfully through the medium of point-of-purchase advertising. If an advertiser wishes to penetrate a new market through the medium of newspaper, magazine, or radio, he must buy their complete coverage in most instances although only a part of this coverage would be necessary for his market. In other words, he has to buy total coverage when he needs only partial coverage. I don't mean to infer that he should not use other media, but the necessity of supplementing it with point-of-purchase is self-evident.

When using point-of-purchase advertising he can confine his message to any section or division of a city, reaching only that portion of the population which are the actual buyers or potential buyers of his merchandise, and he can cover this section (or sections) with any degree of intensity that he desires. See Chart 5.

Because consumer markets vary according to density of population, nationality, and income levels, etc., the advertiser can choose his market in relation to his product and place his point-of-purchase displays only in productive areas; that is, where he knows through analysis that people will buy his particular product. Point-of-purchase advertising is 100% selective.

Because people buy only when they need an article, there is no set time of day to advertise it. A housewife may need butter for breakfast and shop at 8 a.m. Another may not need butter until suppertime and so will shop at 5 p.m. Point-of-purchase advertising works throughout the entire shopping day which is an eighteen hour period from 6 a.m. to midnight, with peaks from:

7 a.m. to 9 a.m. The morning work rush.

12 noon to 2 p.m. Lunch hour shopping peak.

3 p.m. to 12 p.m. Social and pleasure peak.

Through all these peaks, and in between peaks, (See Chart 6), point-of-purchase is advertising and selling the advertiser's merchandise at the point-of-sale. *No other advertising medium gives this perpetual service regardless of cost!*

Conclusions

- 1—Point-of-purchase is not only an advertising but also a selling medium.
- 2—It augments and consummates the efforts of all other media.
- 3—It individualizes and adds personality to the product.
- 4—It is the final reminder to the consumer to buy that particular product at the time he or she is ready to make the purchase.
- 5—Because it discourages last minute attempts to switch the prospect to a substitute product, it is advertising insurance.
- 6—It develops impulse buying.
- 7—It is 100% selective.
- 8—It works an average of 18 hours a day and even the unions can't charge it for overtime.

New Books

(from page 51)

pational monographs being published by Science Research Associates outlining the opportunities and work found in prominent professions. This one contains a brief history of advertising, emphasizing that modern advertising practice has risen far above the undesirable position it held in the days when its clients were dubious patent medicine companies, and pointing out that it has surged forward in the last generation until it has an annual business greater in terms of cash than many industries. The monograph points out that advertising has been among the first to recognize ability in youth since it itself is a youth among American businesses. However, the reader is reminded that the golden age of expansion in the advertising business is over and that it is no longer engaged in a panic search for employees. The edge is off its appetite for workers, declares the author, and it is becoming finicky and careful about the people it hires. Rich opportunities continue to exist in the field, but they exist only for the well-trained with special abilities. This book should be helpful for those who wish to find out what special abilities are required and how to market them. Chapter headings include the Role of Advertising in Business, Advertising Jobs, Breaking Into Advertising, and the Future of Advertising.

The Philadelphia Club held its annual summer outing June 15 at the Philadelphia Rifle Club in Philadelphia. Widely attended, the outing brought to a close until fall the club's monthly activities.

C



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Big printers and small
Who all cheer for KIMBLES
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Motors by KIMBLE

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CHICAGO, ILL.

MODERN LITHOGRAPHY

LITHOGRAPHIC ABSTRACTS

Abstracts of important current articles, patents, and books, compiled by the Research Department of the Lithographic Technical Foundation, Inc. These abstracts represent statements made by the authors of articles abstracted, and do not express the opinions of the abstractors or of the Research Department. Mimeographed lists have been prepared of (1) Periodicals Abstracted by the Department of Lithographic Research, and (2) Books of Interest to Lithographers. Either list may be obtained for six cents, or both for ten cents in coin or U. S. stamps. Address the Department of Lithographic Research, University of Cincinnati, Cincinnati, Ohio.

Photography and Color Correction

Photomechanical Process. M. A. Campbell. Assigned to United Feature Syndicate Inc. U. S. Patent No. 2,175,739. A photomechanical process particularly suited to replace the Ben Day process for the production of comic strips, and also of general applicability, consists in making proof sheets (one for each color plate) from the outline character, the sheets being a light color, but not white, painting in the black areas and white areas where needed on the proof sheets, and then making a half-tone negative from each sheet. The final printing plates are made from these negatives. (*Monthly Abstract Bulletin of Eastman Kodak Company*, 26, 1940, p. 154).

Filter Factors in Color Photography. J. L. Tupper. *Photo Technique*, 2, No. 5, May 1940, pp. 29-33, 56. Color photographs of the present day, except transparencies, must be made by means of color-separation filters. The filter "factors" to be used depend upon the source of light used, the filters used, the sensitive negative material used, and the conditions of exposing and developing this material. The author shows the importance of these controlling factors and explains the important fact that negative materials commonly used for separations do not follow the reciprocity law. Because of this failure, a color photographer cannot make preliminary tests to determine these factors on an intensity basis and later

use them on a time basis. A method of determining accurately the correct time factor to use under any condition is described.

Photography in Color (Book). P. Outerbridge. Random House, Inc., 20 East 57th Street, New York, N. Y. 204 pp. 1940. The volume is divided into two parts, the first part containing sections on "Color and photography; Cameras and Camera Equipment; Lighting and Exposure; Composition and Picture Material; Transparencies." In the second part are the following chapters: "The Laboratory; Separation Negatives; Printing Processes; The Illustrations." Fourteen color process reproductions illustrate the book. Also included are a color chart and an appendix containing: (1) information and prices on cameras and camera equipment, plates and films, and lighting equipment; (2) negative processing formulas; (3) formulae, time tables, and materials for the Dufaycolor, Chromatone, Carbro, and Wash-off Relief processes; (4) information on preparing paper for transferring images; and (5) weights and measures. (*Photo-Engravers' Bulletin*, 29, No. 9, Apr. 1940, pp. 49-50).

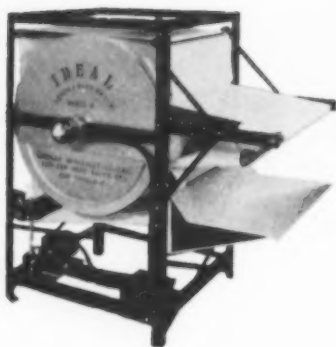
Masking Processes. S. Silka. *Proceed*, 40, pp. 97-112, Sept.-Oct. 1939. The reasons for and methods of carrying out a straightforward masking process are described in detail. The masks used are: positive from blue-printer on the red-printer negative; positive from red-printer on yellow-printer and blue-printer negatives. As flat patches of red, yellow and blue inks are not reproduced as equal densities on the three separation negatives, the masks are arranged to correct this. It is recommended that color wedges of each of the three primary colors should be placed beside the copy as well as a gray wedge; the contrast of the corrected positives should be judged by the reproduction of the color wedge and not by the gray scale, as the contrast of this latter scale will

be altered by the masks. (*Photographic Abstracts*, 20, No. 77, Part I, 1940, p. 47).

Pyro Washoff Method. T. McIntire. *Photo Technique*, 2, No. 5, May 1940, pp. 52-4. This method, while claiming no originality, was designed to simplify the making of wash-off relief color prints. The reliefs are selectively hardened in an oxidized pyro developer. The hardening bleach bath and the washing between developer and bleach are eliminated. By this method it is easy to make the matrices and to turn out a completed print in an hour or less. Additional prints from the matrices may be made as in any other washoff process. Negatives which will make good prints on any normal contrast paper, such as No. 2 Azo, will make good prints.

Color Reproduction Chart. Published by R. S. Cox and C. D. Hallam, 6 Bolt Court, London, E.C. 4, England. The Chart consists of eight colored plates 10 x 7½ inches, each giving 64 tones, so that the entire chart totals over four thousand variations any one of which can be readily matched. This is done by etching down to the dot sizes plainly shown in the margins. Although designed primarily for the half-tone tricolor etcher, it is equally useful as a guide for any other process where dot formations are used, and will give consistent results in color printing. (*Process Engravers' Monthly*, 47, No. 556, Apr. 1940, p. 124).

Materials and Technique for Photomechanical Processes. (Booklet). Anonymous. Gevaert Co. of America, Inc., 423 West 55th Street, New York, N. Y. 1939. 71 pp. Chapters are devoted to formulas for developing, dot-etching, desensitizing, and stay-flat solutions. The action of photographic solutions, safelights, screen distance, screen angles, diaphragm control, exposure, color separation, color correction, Dufaycolor, and Kodachrome are covered. Also included are tables of weights and meas-



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4. **SAFETY FEATURES:** ALL SIMPLEX Gas Models have a combination gas-electric switch and pilot light—making it impossible to turn off the motor without turning off the gas. (PATENTED) Electric models have 3-heat switch. Dryers may be used all day and turned off without injury to the belts. Prints are carried between the two belts—never touching hot metal.
5. **ADDITIONAL FEATURES:** Steel drive ball-bearing rollers. Enclosed gears connected with motor by flexible coupling—insuring longer life to motor and gears. Zipper-laced conveying belt. Dryers are fitted with either 110 or 220-Volt A. C. or D. C. Motor.

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464 N. Fifth Street

Philadelphia, Pa.

ures. (*Lithographers' Journal*, 25, No. 1, Apr. 1940, pp. 37, 43).

Artificial Negatives. J. S. Mertle. *Graphic Arts Monthly*, 12, No. 2, Feb. 1940, pp. 44, 46, 48, 50, 52; No. 3, Mar., pp. 44, 46, 48, 50, 52; No. 4, Apr. pp. 46, 48, 50, 52, 100. The following methods of producing negatives and positives for photomechanical purposes without the use of a camera are described: (1) production of the image on a support of ground glass or celluloid (hyalographs, Pensograph process, Dodge process); (2) engraving the image on a film of photographic collodion asphalt, varnish, bichromated albumin, or gelatin; (3) the use of a lampblack film; (4) fuming engraved images; (5) drawing or painting on glass with white pigments; (6) the production of electrotypes from images on glass by a ceramic procedure; (7) deposition of lead sulfide on glass plates (J. Heidenhain); (8) printing on celluloid, photographic film, or other transparent material from litho stones, intaglio surfaces, or type forms; (9) the use of a film bearing an electrolytic coating of metal; (10) a "strip film" process; (11) the use of tracing cloth; and (12) the use of a typewriter.

Variables in Color Reproduction.

Part II. H. P. Paschel. *MODERN LITHOGRAPHY*, 8, No. 4, Apr. 1940, pp. 36-7, 61, 67. Hand correction is necessary when the deficiencies of any phase of the color reproduction process are variable. Standardization of materials and technique and the close cooperation of all departments will help reduce the amount of handwork necessary. Deficiencies which are invariable, of printing inks, for example, can be compensated for by masking. The effectiveness of the primary masking method depends upon the correctness of the separation negatives. Inaccuracies of the separations can be caused by errors in exposure and development, a light source out of balance, or incorrect filter factors. The Modern Masking Method of Eastman Kodak Co., Dr. Albert's method, and Gevaert's Transparency Masking Process are described. Although masking methods do not alleviate all the deficiencies of the reproduction process, their value in producing a marked de-

gree of correction should not be underestimated.

Planographic Printing Surfaces and Plate Preparation

Preparation of Printing Plates. A. Schlesinger. *U. S. Patent* No. 2,198,017 (April 23, 1940). In the process for the production of lithographic and printing plates which are to be etched, in which a varnish is spread over the plate to form a protective coat thereon, the step of wiping the coat of varnish with a solution of a carrier substantially inert to varnish and a containing a small proportion of a substance which is a solvent for the varnish, whereby the coating of varnish on the parts from which it is to be removed is rendered so thin that it becomes penetrable by water.

New Materials—New Methods—New Ideals in the Making of Reproductions. I. H. Sayre. *Midwestern Lithographer*, 4, No. 12, Apr. 1940, pp. 5-6. As stainless steel plates must be grained, they offer no particular advantage over zinc and aluminum as far as printing quality is concerned. Bi-metallic plates seem to be the greatest improvement in this line. The characteristics and advantages of the Aller process, the Alkuprint process, a new German mercurized plate, and the Canadian Basebond plate are summarized.

How About Dry Offset Printing?

J. Stark. *Inland Printer*, 105, No. 1, Apr. 1940, p. 50. Curved relief plates which print by the offset process are used in the production of check backgrounds, printed cans, and fan-fold stationery. The design is placed on a zinc litho plate and etched into relief by a nitric acid solution. The process is essentially letterpress, and printing is done on a letterpress offset machine. The chief difficulty is the indentation of the blanket by the relief surface. Mercury processes, an attempt at dry lithography, have not succeeded, as ordinary lithography does the same work more simply.

Making Albumin Plates for Long Runs. J. Stark. *Lithographers' Journal*, 25, No. 1, Apr. 1940, pp. 18, 43. Three main factors are required to insure a durable albumin plate: (1) a fine sharp grain of even texture; (2) a correct formula for the albumin coat-

ing solution, and its correct application to the plate; and (3) a negative with sharp, well-defined dots, and proper exposure in printing down. Plate graining is all too often done by unskilled and inexperienced men, much to the detriment of plate life. Plates should be sensitized with glacial acetic acid, 6 ounces to one gallon of water, to remove the oxide film formed upon exposure to air. The ratio of ammonium dichromate to albumin chosen (not lower than 1 to 3 or higher than 1 to 4) should not be allowed to vary. A formula for albumin coating solution is given.

The Aller Process. E. Humphries. *Penrose Annual*, 42, 1940, pp. 105-7. In this process polished stainless steel plates are coated with cold-top enamel, printed from positives, and developed in methyl alcohol. The image may be hardened by "cooking" the plate for a few minutes at 300° C., after which the plate is cleaned in a sulfuric acid bath and immersed in a "preparation" bath. Copper is then electrolytically deposited on the printing areas, after which the lacquer is removed and the plate is ready for printing. After printing, the copper image may be removed and the plate re-used. The durability of the copper image insures perfect prints throughout long runs at the highest press speeds attainable. Due to lack of grain, tones are smooth and dot formation is excellent. Less water is used, and less image thickening occurs than with grained plates.

Plate - Making Procedure. E. Bruyning. *MODERN LITHOGRAPHY* 8, No. 4, Apr. 1940, pp. 23-5, 61. This elementary article describes in detail each step of the albumin platemaking process; counter-etching, pre-etching, coating, exposure, inking, developing, plate-etching, gumming, and washing out.

Equipment and Materials

Dampener for Printing Presses.

E. C. Grambecki (to Roberts & Porter, Inc.). *U. S. Patent* No. 2,196,412 (April 9, 1940). In a device of the class described, a housing, power-driven atomizing means in said housing for breaking up water therein into fine particles, an air distributing chamber communicating with said housing, a pressure chamber having communi-



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cation with said distributing chamber, and driven means for maintaining air pressure in said pressure chamber and cooperatively driven with said atomizing means. In a press dampener, air pressure means including an air distributing chamber and coating atomizing means, a pressure chamber, and constricted duct means connecting said chambers.

Paper and Ink

Use of Amines with Pigments.

C. K. Sloan and G. D. Patterson (to E. I. du Pont de Nemours & Co.). *U. S. Patent No. 2,192,955* (Mar. 12, 1940). A free flowing and non-livering pigmented composition which comprises a pigment selected from the group consisting of lead containing pigments and phosphotungstic acid toners, and a free amine containing at least one amino nitrogen group which amine is capable of forming salts with acids.

Control of the Behavior of Paper.

V. L. Shaw. *Share Your Knowledge Review*, 21, No. 6, Apr. 1940, pp. 8-9. *Midwestern Lithographer*, 4, No. 12, Apr. 1940, pp. 1, 4. The control of the behavior of paper is a joint responsibility of the paper manufacturer and printer. The printer should study closely the natural properties of paper and develop a better technique of control in relation to temperature and moisture effects. It is recommended that the buying, storage, handling, and conditioning of paper in the printing plant be made the responsibility of one individual or department. Air conditioning and humidification are very helpful but are not a cure-all; craftsmanship and technique are the most important factors in paper control. Charts illustrate the various effects of moisture and temperature upon paper, and a discussion closes the article.

Characteristics of Offset Papers.

E. S. Dunbar. *MODERN LITHOGRAPHY*, 8, No. 4, Apr. 1940, pp. 27-9. The three principal requirements of all good offset papers are pliability, good surface, and correct moisture content. Offset paper must be mellow on the inside but firm on the surface. Running the grain the long way of the sheet accentuates pliability. Offset papers must be free from "whiskers"

or loose surface fibers which cause picking or linting and the consequent frequent washups. Relative humidity, seasoning, and static electricity troubles are discussed in connection with moisture content.

The Sizing Operation. W. N. Misuraca. *National Lithographer*, 47, No. 4, Apr. 1940, p. 26. Sizing varnish used in metal decorating is a mixture of resin and oxidizing oils. Synthetic sizing varnish is necessary for use with synthetic coatings and inks. The most important characteristics are adherence and flexibility. The elimination of the sizing coat and the satisfactory adherence of the coating materials and inks are dependent on the complete oxidation of these materials after application and baking. This is based on the proper formulation of the materials themselves. Causes of incomplete hardening are listed. Sizing assures the proper fabrication of the decorated sheet and enhances the quality of the finished product.

Offset Inks. T. Makarius. *American Ink Maker*, 18, No. 4, Apr. 1940, pp. 25-6; *MODERN LITHOGRAPHY*, 8, No. 4, Apr. 1940, p. 53. Each ink can should bear specific and complete instructions as to how to use the ink contained in it. Inks should be run as near as possible to their original consistency. Only four varnishes are recommended for pressroom addition, No. 000, No. 0, No. 2, and No. 8. A satisfactory ink will print equally well on most papers. Care should be taken to run the proper amount of ink. Drying troubles are caused by careless measuring of driers and by improper control of water supply. Causes and remedies for stripping trouble, scumming, paper sticking to the blanket, non-uniform or spotty drying, and incorrect matching of proving colors in the pressroom are suggested.

Offset Technique. J. Stark. *Inland Printer*, 105, No. 1, Apr. 1940, pp. 29-30. Ink emulsification and the use of pile deliveries cause slower ink drying in offset. The best ink should be used, and a minimum amount of water should be carried on the plate. Drier should not be added until the ink is to be printed, and not more than 2 to 4 per cent should be used. Rubber form rollers can be evened by grinding in a lathe with a fast alumi-

num grinder. Counter-etching is necessary for the hand transfer method, and advisable regardless of the process used. A method of graining plates insuring good results is presented.

Offset Press Operation. C. W. Latham. *MODERN LITHOGRAPHY*, 8, No. 4, Apr. 1940, pp. 33, 39. Cylinder imperfections necessitate the use of excess pressure which changes the surface speed of the cylinder at the point of contact, upsetting the perfect synchronization of the cylinders so necessary to the offset process. Lack of synchronization causes a grinding away of the water-receptive coating and grain on the plate. Scumming, tinting, ink emulsification, streaking, blinding, and sharpening may then ensue. A simple, inexpensive, and accurate method of testing cylinders by printing solid sheets under varying degrees of back pressure is described.

Miscellaneous

Lithographing the Tin Can.

G. E. Monroe, Jr. *Products Finishing*, 4, No. 6, 9-10, 12 (1939). A description of chemical and mechanical treatments at the American Can Company's Englewood plant in Chicago. (*Chemical Abstracts*, 34, No. 7, Apr. 10, 1940, p. 2494)

Progress in Photographic Type Composition. V. E. Goodman. *Penrose Annual*, 42, 1940, pp. 101-4. The system of photographic type composition covered by Westover patents uses the single character as the unit of exposure, and a line as unit of correction. Only one negative for any one character in any point size is used, and the camera is fixed focus. A complimentary paging machine embodies facilities for focusing, and thus for variation in body sizes and amount of leading. The Intertype system starts with master negatives of varying point sizes and widths, and the camera has a focusing device. Here also the correction unit is a line. In both cases the original film must be rephotographed before printing down on plate or cylinder. The Intertype Machine should operate at about the same speed as their type-casting machine; the Westover machine more quickly than its parent for type. Makeready time saved and better quality should outweigh the disadvantage of increased correction time.

"WHERE-TO-BUY-IT"

NOTE: This is a classified list of the companies which advertise regularly in MODERN LITHOGRAPHY. It will aid you in locating advertisements of equipment, materials or services in which you are particularly interested. Refer to the Advertiser's Index, on page 79 for page numbers. "Say you saw it in Modern Lithography."

CHEMICALS

Agfa-Ansco Corp.
Eastman Kodak Co.
Harris-Seybold-Potter Co.
Philip A. Hunt Co.
Litho Chemical & Supply Co.
Mallinckrodt Chemical Works
Norman-Willets Co.
Harold M. Pitman Co.
Senefelder Co., Inc.
J. M. & G. B. Siebold, Inc.
Sinclair and Valentine Co.
E. T. Sullebarger Co.
Techno-Chemical Products Co., Inc.

Strathmore Paper Co.
West Virginia Pulp & Paper Co.
Whiting-Plover Paper Co.

PHOTO DRY PLATES AND FILMS

Agfa Ansco Corp.
G. Cramer Dry Plate Co. (Photo Dry Plates)
Eastman Kodak Co.
Hammer Dry Plate & Film Co.
Norman-Willets Co.
Harold M. Pitman Co.

GRAINING AND REGRAINING

(Zinc, Aluminum, Glass and Multilith Plates)

Fuchs & Lang Mfg. Co., Div. General Printing Corp.
International Printing Ink Div. of Interchemical Corp.
Litho Plate Graining Co. of America, Inc.
Reliable Litho Plate Graining Co.
Senefelder Co., Inc.
Standard Litho Graining Co.

GRAINING AND REGRAINING MATERIALS

International Printing Ink Corp.
Senefelder Co., Inc.
J. H. & G. B. Siebold, Inc.

INKS—(Varnishes and Dryers)

Crescent Ink & Color Co. of Penna.
Martin Driscoll & Co.
Howard Flint Ink Co.
Fuchs & Lang Mfg. Co., Div. General Printing Ink Corp.
Gaetjens, Berger & Wirth, Inc.
International Printing Ink Div. of Interchemical Corp.
E. J. Kelly Co.
George H. Morrill Co. Div. General Printing Ink Corp.
F. G. Okie, Inc.
H. D. Roosen Co.
The Senefelder Co., Inc.
J. H. & G. B. Siebold, Inc.
Sinclair & Carroll Co.
Sinclair and Valentine Co.

MISCELLANEOUS

Russell Ernest Baum (Folding Machy.)
Ralph C. Coxhead Corp. (Composing Machines)
Ben Day, Inc. (Shading Medium)
Dexter Folder Co. (Folding Machy.)
Leiman Bros., Inc. (Vacuum Pumps)
Planographers Rig & Reel Co. (Typewriter Attachment)

PAPER

The Martin Cantine Co.
Chillicothe Paper Co.
Hammermill Paper Co.
Mid-States Gummed Paper Co.
Sorg Paper Co.

PLATE MAKING EQUIPMENT & SUPPLIES

Aluminum Co. of America (Aluminum Plates)
American Type Founders Sales Corp.
Artists Supply Co. (Opaque)
California Ink Co., Inc.
The Douthitt Corp.
Fuchs & Lang Mfg. Co., Div. General Printing Ink Corp.
C. P. Goerz American Optical Co. (Lenses)
Illinois Zinc Co. (Zinc Plates)
William Korn, Inc. (Litho Crayon and Litho Crayon Paper Pencil Mfrs.)
Lanston Monotype Machine Co.
Litho Equipment & Supply Co.
Macbeth Arc Lamp Co. (Arc and Printing Lamps)
National Carbon Co., Inc. (Carbons)
Norman-Willets Co.
F. G. Okie, Inc. (Opagues—Developing Inks)
Harold M. Pitman & Co.
Repro-Art Machinery Co. (Cameras, Lenses, etc.)
Rutherford Machinery Co., Div. General Printing Ink Corp.
Senefelder Co., Inc.
Simplex Specialty Co., Inc. (Film Dryers)
E. T. Sullebarger Co.

PLATE MAKING SERVICES

Baker Reproduction Co.
Modern Litho Plate Co.

PRESSROOM EQUIPMENT & SUPPLIES

American Type Founders Sales Corp. (Presses—Offset Spray Gun, etc.)
Bingham Brothers Co. (Rollers, etc.)
Sam'l Bingham Son Mfg. Co. (Rollers)
Fuchs & Lang Mfg. Co., Div. General Printing Ink Corp.
Godfrey Roller Co. (Dampening Rollers).
Harris-Seybold-Potter Co. (Presses)
R. Hoe & Co., Inc. (Presses—Offset and Metal Decorating)
Ideal Roller & Mfg. Co. (Rollers)
International Press Cleaners & Mfg. Co. (Press Cleaner)
International Printing Ink Div. of Interchemical Corp.
Kimble Electric Co. (Motors)
Harold M. Pitman Co.
Rapid Roller Co. (Rollers and Blankets)
The Rathbun & Bird Co., Inc. (Machinists)
Roberts & Porter, Inc.
Senefelder Co., Inc.
J. H. & G. B. Siebold, Inc.
Sinclair and Valentine Co. (Blankets)
Steelitho Plate Corp. (Blanket Cleaner, Steel Plates, etc.)
E. T. Sullebarger Co.
W. A. Taylor & Co., Inc. (pH Control for Fountain Solutions)
Vulcan Proofing Co. (Rollers and Blankets)

CLASSIFIED

All classified advertisements will be charged for at the rate of ten cents per word. \$2.00 minimum, except those of individuals seeking employment, where the rate is five cents per word, \$1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of Modern Lithography, 254 W. 31st St., New York. Closing date: 1st of month.

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Rutherford Photo-composing machine, (step and repeat) 22 x 28, ideal for medium sized offset plant. Complete with three negative holders. Practically new. Bargain, less than half the original cost. Address Box #570.

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Able craftsman, 38, wants job with lithographing concern. Twelve years experience in newspaper and commercial photo-engraving shops. Can turn out half-tones with fine quality with either wet-plate or strip film. Qualified to do stripping, printing, etching and finishing. Married, American and in good health. Best of references. Address Box #571.

For Sale:

2-color Harris Offset press, style LSG size 46½" x 68½", complete with DC motors and control. Recently factory rebuilt. Can be seen in operation. Address Box #572.

For Sale

30" x 40" Vacuum Printing Frame, \$85.00; 35 Ampere 110 Volt Twin Arc Printing Lamp, \$35.00; 25 Ampere 110 Volt Printing Lamp, \$25.00; Gelb, Macbeth, Pease, & Wohl Printing & Camera Lamps. Singer Engineer-

ing Co., Camera & Lamp Experts, 242 Mott Street, New York City, WO 4-6088.

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Position Wanted:

Young offset-pressman experienced in all kinds of work, able to take charge medium-sized plant, seeks position which requires initiative and ability. Address Box #573.

Wanted:

Harris Model EL 22x34 offset press. State age, condition, electrical specifications and price. Address Box 575.

Situation Wanted:

Competent cameraman and plate-maker, good halftones, durable albumin and deep-etch plates. Accustomed to quality work. Desires permanent connection, any location. Address Box #574.

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The School Market

(from page 37)

After having launched a campaign of telling the world about our *Daily Pinion*, the school paper here at McKinley High, a flood of inquiries came in. One question invariably asked was: "Is it necessary to own our own press?" The answer is, generally, "No". Most schools don't want to set up their own printing shops, but they sometimes are driven to it. There is no reason why a commercial press can't compete with a school-owned press, for a school press can only operate a limited number of hours. The school press needs a professionally-trained pressman, complete camera and darkroom equipment, plate-making facilities, etc. Unless photo-offset is being taught by the school as one of its courses, the idea is extremely impractical and unsatisfactory. It is also injurious to the offset industry as a whole simply because the quality of work is certain to be inferior, causing damaging reflections to be made about the process. Lithographers should discourage school-owned plants by offering more attractive costs and results. The only saving a school can make by operating its own press is on rent and overhead, which saving is usually counterbalanced by the higher rental charge necessary to write-off the cost of the machinery in a reasonable period of time.

THE average educator wants to support the local lithographer and he expects him to make a fair profit. He is also ready to give the lithographer far more business than he now does, if only the lithographer will be frank about charges and helpful when it comes to explaining what offset can do for his school. School printing is still a virgin field. The lithographer should make the most of an opportunity to help the schools in their task of making education more virile and appealing to the picture-loving young people of this country.



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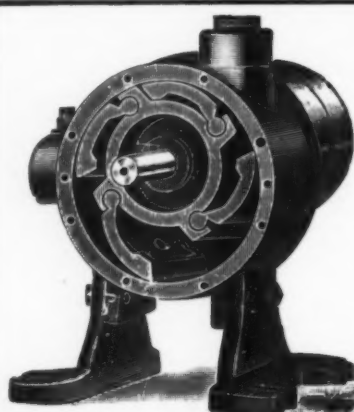
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Coast Papers Adopt Offset

Industrial City Publishing Co., South San Francisco, Calif., newspaper publisher, has adopted the photo-offset process for three of its publications, *The Enterprise*, *The South San Francisco Journal* and *Brisbane Star*, it is announced. The South San Francisco papers are the first west of the Rocky Mountains to install the photo-offset method of printing. A Webendorfer 17 x 22 sheet-fed offset press and photographic equipment supplied by American Type Founders are being used. The papers are tabloids ranging from eight to twelve pages. Logan Franklin and Aileen Bramble are publishers.

Whiting-Plover Booklet

Whiting-Plover Paper Co., Stevens Point, Wis., is distributing copies of a booklet entitled "Balance-Paper's Intangible Ingredient", containing the story of the procedure followed by Whiting-Plover in the manufacture and marketing of its rag-content bond and ledger papers. Copies available on request.

Sees Offset for News Growing

In a speech delivered at the meeting of the Iowa State Press Association's mechanical division at Sioux City, Ia., on May 20, James H. Gregory, promotion manager for E. G. Ryan & Co., Chicago representatives for the Webendorfer-Wills division of American Type Founders, expressed the belief that offset is on the verge of far greater use for newspaper production, particularly for country newspapers.

He emphasized the opportunity offset gives the smalltown publisher to make profuse use of pictures in editorial and advertising columns, thus providing a certain circulation magnet. *The Steele County Photo-News*, of Owatonna, Minn., in its first year used 1,346 pictures of everything from wedding parties to cornhusking contests, he said. Costs of installation were discussed by Mr. Gregory, who also outlined the various advantages of the offset process and suggested future trends. As the newspaper industry makes greater use of offset, he declared, the possibilities for profit will be greatly expanded.

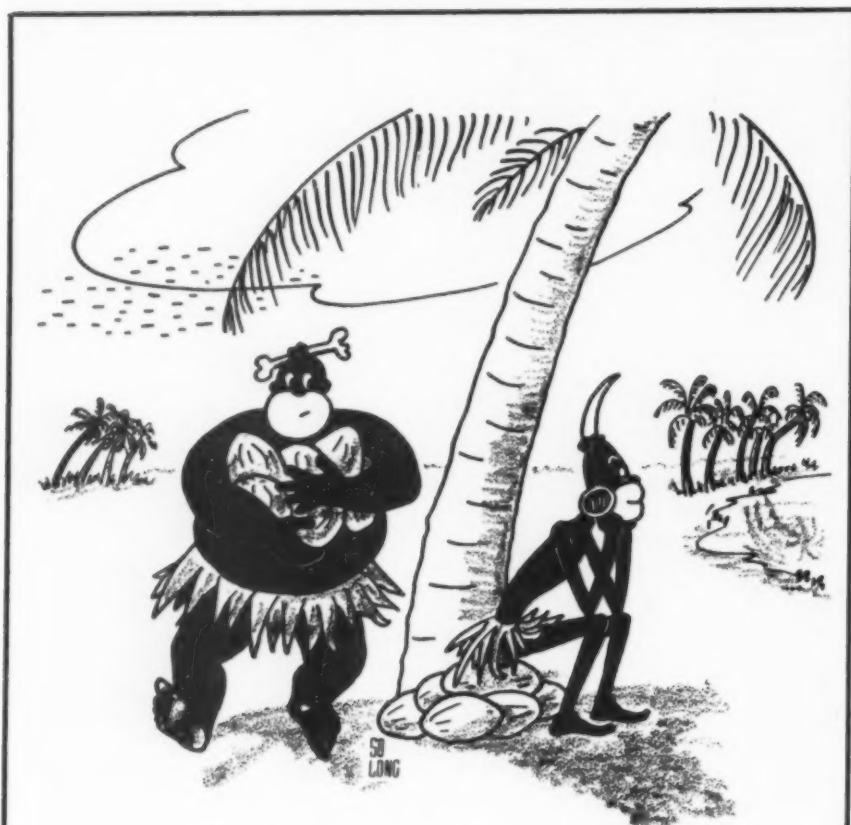
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"You know, Cuthbert, I'd like to get away from all this and go where it's quiet . . ."

... where it's quiet!

BACK off the beaten path, back off the highways and by-ways where it's quiet . . . back where it's too expensive to send salesmen very often . . . that's where your advertising reaches to create and sustain a demand for your products.

And if your goods are sold to industrial buyers, what is more logical or direct than to advertise in the trade publications serving specifically the fields which you want to sell?

For example, if it happens to be in the rapidly growing lithographic field, the publication to use is

MODERN LITHOGRAPHY

254 WEST 31st STREET

NEW YORK, N. Y.

Schools Turn to Offset

Newspapers and magazines produced by the planographing process are becoming popular among amateur journalists in Chicago's elementary public school system. During the past year twenty schools belonging to the Chicago Elementary Press Association switched from mimeographing to planograph production, bringing to 75 the total number of public grade school planographed publications. Planographing is being encouraged, it is said, because it permits exact reproduction of the youngsters' original art work as well as snapshots of school leaders and school activities at low cost. Chicago firms doing planographing are permitted to talk up the process at meetings of the young editors. An extensive exhibit of these grade school publications was displayed in the Chicago Public Library last month. Millar Publishing Co. claims in its advertisements directed at the children that it was the first Chicago concern to promote planographed school newspapers. Among other firms now handling this business are Greenlee Co., John B. Swift Co., and Midwest Offset Co.

W. M. Welch Dies

William M. Welch, founder and head of W. M. Welch Manufacturing Co., offset concern of Chicago, died last month at the age of 83. Establishing his business sixty years ago, Mr. Welch specialized in production of diplomas and other printed school supplies. In 1931 his firm pioneered in use of the offset process for production of scholastic yearbooks.

Chicago Show Printing Co., lithographing and letterpress firm, Chicago, has announced the transfer of John B. Sackley, Jr. from Chicago to its New York sales office.

H. K. Peirce has been added to the staff of E. G. Ryan & Co., Chicago Webendorfer offset press sales agents. He will cover Michigan and Indiana.

Brown & Bigelow, St. Paul calendar manufacturers, last month installed a new Lanston M-H 4, motor-focusing overhead projection camera.

MODERN LITHOGRAPHY



Stake Your Claim On Quality...

Prospecting for better results? Here's your lead to excellence: Use REPROLITH--the dependable film for camera and contact exposures. It brings you these great features:

- 1. Maximum contrast**
- 2. Greatest resolving power**
- 3. Extra latitude in development**
- 4. Anti-halation coating**
- 5. Safety base**

REPROLITH FILM
REGULAR AND THIN - BASE



FOR BEST RESULTS USE BEST MATERIALS
AGFA ANSCO • BINGHAMTON, N.Y. MADE IN U.S.A.

9
LITHOGRAPHY CAN BE ONLY AS GOOD AS THE PRESS

THAT PRODUCES IT •

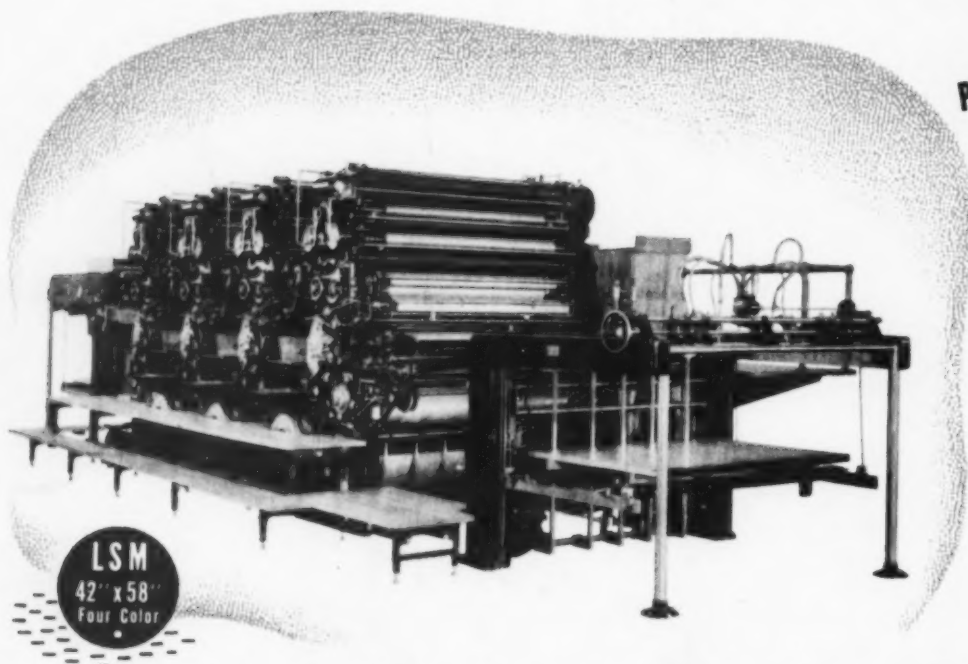
produce it on a Harris!

***According to overwhelming opinion it will
then be as good as offset presses can make it***

There is no compromising on presswork quality in the lithography produced on a Harris. Offset craftsmanship is actually a part of Harris structure. In the press itself goes the skill and experience of the

pioneer builders of offset press equipment.

This understanding of performance is based upon thorough knowledge of press-room operations and provides presses that will produce the pressman's own skill.



***Produce it on a Harris!
There is a size for every
lithographic need—***

Litho Chemicals

• Through research Harris has developed and standardized new chemicals for both deep etch and surface plate making processes. Full details upon request. Write us with reference to your lithographic problems.

HARRIS SEYBOLD POTTER COMPANY

General Offices: 4510 East 71st Street, Cleveland, Ohio. Harris Sales Offices: New York, 330 West 42nd Street; Chicago, 343 South Dearborn Street; Dayton, 819 Washington Street; Atlanta (Harris-Seybold-Sales Corp.), 120 Spring Street, N. W.; San Francisco, 420 Market Street. Factories: Cleveland, Dayton.

